

EXHIBIT 1

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

PARTIES' JOINT STATEMENT OF UNDISPUTED FACTS

The following facts are admitted by the parties and require no proof:

The Asserted Patent

1. On November 18, 2008, the United States Patent and Trademark Office issued U.S. Patent No. 7,453,881 (the “‘881 Patent”), entitled “Systems and Methods for Multi-Pair ATM Over DSL.”

2. The non-provisional application (10/264,258) that issued as the ‘881 Patent was filed on October 4, 2002.

3. The ‘881 Patent ultimately claims priority on its face to U.S. Provisional Application No. 60/327,440, filed on October 5, 2001.

4. The named inventors on the ‘881 Patent are Marcos C. Tzannes, Edmund Reiter, and Christopher Cahill.

5. Plaintiff TQ Delta, LLC (“TQ Delta” or “Plaintiff”) owns the ‘881 patent.

The Parties

6. TQ Delta is a limited liability company organized and existing under the laws of the State of Delaware and having a principal place of business at 805 Las Cimas Parkway, Suite 240, Austin, Texas 78746.

7. Defendant 2Wire, Inc. (“2Wire” or “Defendant”) was a corporation organized and existing under the laws of the State of Delaware and having a principal place of business at 1764 Automation Parkway, San Jose, California 95131.

8. As of January 1, 2017, 2Wire, Inc. was merged to form ARRIS Solutions, Inc. as a result of a merger between 2Wire, Inc., Aurora Networks, Inc., and ARRIS Solutions Inc.

Accused Products

9. 2Wire makes, has made, sells, has sold, offers for sale, has offered for sale, imports, or has imported the following products: 5168 N, 5168NV, 5268AC, and i3812V.

10. The aforementioned products contain the following [REDACTED]

[REDACTED]

a. 5168N, 5168NV, and 5268AC [REDACTED]

b. 3812V [REDACTED]

11. The accused products were first sold and offered for sale in the U.S. on or about the following date:

a. 5168N – September 2012

b. 5168NV – February 2013

c. 5268AC – July 2014

d. 3812V – February 2010

Prior Art

12. The ATM Forum Technical Committee’s “Inverse Multiplexing over ATM (IMA) Specification Version 1.0 (AF-PHY-0086.000)” is prior art to the ’881 patent.

13. U.S. Patent No. 6,222,858 to Counterman is prior art to the ’881 patent.

14. U.S. Patent No. 6,956,872 to Djokovic is prior art to the ’881 patent.

15. European Application No. WO 99/39468 to Edvardsen is prior art to the ’881 patent.

16. U.S. Patent No. 7,068,657 to Keller-Tuberg is prior art to the ’881 patent.

17. U.S. Patent No. 6,772,388 to Cooper is prior art to the ’881 patent.

EXHIBIT 2

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

**TQ DELTA’S STATEMENT OF ISSUES OF FACT WHICH REMAIN TO BE
LITIGATED**

TQ Delta identifies the following issues of fact which remain to be litigated. This statement is based on the current status of the case and the Court’s rulings to date. TQ Delta reserves the right to modify or supplement this statement in response to subsequent rulings by the Court. Should the Court determine that any issue identified here is more appropriately considered an issue of law, TQ Delta incorporates such issues by reference into its Statement of Issues of Law That Remain to Be Litigated (Exhibit 4). To the extent that TQ Delta’s Statement of Issues of Law That Remain to Be Litigated contains issues that the Court deems to be issues of fact, those issues are incorporated herein by reference.

TQ Delta does not assume the burden of proof with regard to any of the below-mentioned facts. TQ Delta reserves its right to revise this statement in light of the Court’s rulings.

I. Infringement of the ‘881 Patent.

Whether 2Wire infringed the asserted claims of the ‘881 Patent by making, using, selling, importing and/or offering for sale the products accused of infringement by TQ Delta.

II. Invalidity.

Whether 2Wire has proven by clear and convincing evidence that any asserted claim of TQ Delta '881 Patent is invalid under 35 U.S.C. § 102, 103, and the Written Description provision of 112.

III. Breach of FRAND Obligation (not to be tried at first trial for Family 2).

Whether 2Wire has proven by a preponderance of the evidence that TQ Delta breached the following contractual obligation to the ITU-T and/or third party beneficiaries as it relates to its '881 patent: "The patent holder is willing to negotiate licences with other parties on a non-discriminatory basis on reasonable terms and conditions. Such negotiations are left to the parties concerned and are performed outside ITU-T/ITU-R/ISO/IEC."

Subject to motions and objections by TQ Delta, the amount of money has 2Wire proven by a preponderance of the evidence that it is entitled to receive from TQ Delta, if any, to compensate 2Wire for any actual injury caused by any material breach of the above referenced "FRAND" obligation.

IV. Damages – Patent (not to be tried at first trial for Family 2).

A. Reasonably Royalty.

The damages of not less than a reasonable royalty that TQ Delta should be awarded due to 2Wire's infringement of TQ Delta's '881 Patent.

The amount owed to TQ Delta for damages through 12/31/16 and through trial and post-verdict infringement.

EXHIBIT 3

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

2WIRE’S STATEMENT OF ISSUES OF FACT WHICH REMAIN TO BE LITIGATED

2Wire identifies the following issues of fact which remain to be litigated. This statement is based on the current status of the case, the Court’s April 1, 2019 Order indicating that the Court does not “intend to try any FRAND, contract, damages, and equitable issues until after I have determined which patents asserted against 2Wire are valid and infringed,” D.I. 1043, and the Court’s April 10, 2019 Memorandum Opinion and Order, D.I. 1058, 1059. 2Wire reserves the right to modify or supplement this statement in light of further decisions or orders from this Court, any of TQ Delta’s pretrial statements, and to the extent any amendments or other alterations arise impacting the facts or issues for trial.

Should the Court determine that any issue identified here is more appropriately considered an issue of law, 2Wire incorporates such issue by reference into its Statement of Issues of Law That Remain to Be Litigated (Exhibit 5). To the extent that 2Wire’s Statement of Issues of Law That Remain to Be Litigated contains issues that the Court deems to be issues of fact, those issues are incorporated herein by reference.

2Wire does not assume the burden of proof with regard to any of the below-mentioned factual issues.

I. Infringement of the '881 Patent.

1. Whether 2Wire infringes Claims 17 and 18 of the '881 patent by making, using, selling, importing and/or offering for sale the products accused of infringement by TQ Delta.

II. Invalidity of the '881 Patent.

2. Whether Claims 17 and 18 of the '881 patent are invalid as anticipated under 35 U.S.C. § 102 by the IMA Spec 1.0.

3. Whether Claims 17 and 18 of the '881 patent are invalid as anticipated under 35 U.S.C. § 102 by Counterman.

4. Whether Claims 17 and 18 of the '881 patent are invalid as anticipated under 35 U.S.C. § 102 by Edvardsen.

5. Whether Claims 17 and 18 of the '881 patent are invalid as anticipated under 35 U.S.C. § 102 by Keller-Tuberg.

6. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103 over Counterman and Djokovic.

7. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103 over Edvardsen and Djokovic.

8. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103 over Edvardsen and Counterman.

9. Whether Claim 17 of the '881 patent is invalid as obvious under 35 U.S.C. § 103 over Keller-Tuberg and the IMA Spec 1.0.

10. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103 over Keller-Tuberg and Cooper.

11. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103 over Keller-Tuberg and Djokovic.

12. Whether Claims 17 and 18 of the '881 patent are invalid for lack of written description under 35 U.S.C. § 112 for failure to disclose “each bonded transceiver utilizing at least one transmission parameter value to reduce a difference in latency between the bonded transceivers.”

EXHIBIT 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

**TQ DELTA’S STATEMENT OF ISSUES OF LAW WHICH REMAIN TO BE
LITIGATED**

TQ Delta identifies the following issues of law which remain to be litigated, with a citation to authorities relied upon. This statement is based on the arguments TQ Delta expects to make as well as its understanding of the arguments that 2Wire, Inc. (“2Wire”) is likely to make. If 2Wire seeks to introduce different legal arguments, TQ Delta reserves the right to supplement this statement. This statement is based on the current status of the case and the Court’s rulings to date. TQ Delta reserves the right to modify or supplement this statement in response to subsequent rulings by the Court. Should the Court determine that any issue identified here is more appropriately considered an issue of fact, TQ Delta incorporates such issues by reference into its Statement of Issues of Fact That Remain to Be Litigated (Exhibit 2). To the extent that TQ Delta’s Statement of Issues of Fact That Remain to Be Litigated contains issues that the Court deems to be issues of law, those issues are incorporated herein by reference. The authority cited herein is not exhaustive; any party may rely on authority not cited in this statement.

I. Attorneys’ Fees and Costs.

Whether TQ Delta has proven by a preponderance of the evidence that it is entitled to attorneys’ fees and costs.

- Authority: F.R.C.P. 54; 35 U.S.C. § 285; 28 U.S.C. § 1920; *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014).

II. Injunction.

Whether, upon a finding of infringement, a preponderance of the evidence supports a finding that TQ Delta is entitled to a permanent injunction prohibiting 2Wire's continued infringement of the asserted patent.

- Authority: 35 U.S.C. § 283; *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 391-92 (2006).

III. Breach of FRAND Obligation (not to be tried at first trial for Family 2).

The scope of any contractual obligation to be prepared to license the asserted patent on fair, reasonable and non-discriminatory terms pursuant to ITU-T policy.

The scope of any contractual obligation to disclose certain patent information to the ITU-T pursuant to ITU-T policy.

Whether the asserted breach by TQ Delta (or Aware, Inc., its predecessor in interest to the asserted patent) of an alleged obligation to disclose certain patent information to the ITU-T would result in a waiver of TQ Delta's right to enforce the '881 Patent against 2Wire.

Whether 2Wire may maintain an action for breach of a FRAND obligation of the asserted patent where it has never applied for a license or negotiated for one in good faith, denies that the subject patent claims are standard essential, denies that it implements the sections of the standards relevant to the asserted patent, and has failed to commit itself to FRAND licensing for the DSL standards.

- Authority: *Core Wireless Licensing S.A.R.L. v. Apple, Inc.*, 899 F.3d 1356, 1368 (Fed. Cir. 2018); *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004 (Fed. Cir. 2008); *Godo Kaisha IP Bridge 1 v. TCL Commun. Tech. Holdings Ltd.*, 2017 U.S. Dist. LEXIS 26824 at *9 (D. Del. Feb. 27, 2017); ITU-T Policy; *Ivize of Milwaukee, LLC v. Complex Litig. Support, LLC*, C.A. No. 3158, 2009 Del. Ch.LEXIS 55 at *41 n.48 (Del. Ch., Apr. 27, 2009) (Citing RESTATEMENT (SECOND) OF CONTRACT § 246 (1981)); *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1049 (9th Cir. 2015); *Phunware, Inc. v. Excelmind Grp. Ltd.*, 117 F. Supp. 3d 613, 627 (D. Del. 2015); *Princeton Dig. Image Corp. v. Office Depot, Inc.*, C.A. No. 13-239, 2017 U.S. Dist. LEXIS 120493, at *15 (D. Del. Aug. 1, 2017); *Scion Breckenridge Managing Member, LLC v. ASB Allegiance Real Estate Fund*, 68 A.3d 665, 686 (Del. 2013); *Testa v. Nixon Unif. Serv.*, C.A. No. 3886- VCS, 2008 Del. Ch. LEXIS 170 at *11 (Del. Ch. Nov. 21, 2008); *Tyco Healthcare Grp., LP v. C.R. Bard, Inc.*, 818 F. Supp. 2d 777, 787 (D. Del. 2011).

EXHIBIT 5

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

2WIRE’S STATEMENT OF ISSUES OF LAW WHICH REMAIN TO BE LITIGATED

2Wire identifies the following issues of law which remain to be litigated, with a citation to authorities relied upon. This statement is based on the arguments 2Wire expects to make as well as its understanding of the arguments that TQ Delta is likely to make. If TQ Delta seeks to introduce different legal arguments, 2Wire reserves the right to supplement this statement. This statement is based on the current status of the case, the Court’s April 1, 2019 Order indicating that the Court does not “intend to try any FRAND, contract, damages, and equitable issues until after I have determined which patents asserted against 2Wire are valid and infringed,” D.I. 1043, and the Court’s April 10, 2019 Memorandum Opinion and Order, D.I. 1058, 1059. 2Wire reserves the right to modify or supplement this statement in light of further decisions or orders from this Court, any of TQ Delta’s pretrial statements, and to the extent any amendments or other alterations arise impacting the facts or issues for trial.

Should the Court determine that any issue identified here is more appropriately considered an issue of fact, 2Wire incorporates such issue by reference into its Statement of Issues of Fact That Remain to Be Litigated (Exhibit 3). To the extent that 2Wire’s Statement of Issues of Fact That Remain to Be Litigated contains issues that the Court deems to be issues of

law, those issues are incorporated herein by reference. The authority cited herein is not exhaustive; any party may rely on authority not cited in this statement.

I. Invalidity.

1. Whether Claims 17 and 18 of the '881 patent are invalid as anticipated under 35 U.S.C. § 102.

- Authority: 35 U.S.C. § 102; *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted) (Invalidity for anticipation “requires that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation”).

2. Whether Claims 17 and 18 of the '881 patent are invalid as obvious under 35 U.S.C. § 103.

- Authority: 35 U.S.C. § 103; *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1326 (Fed. Cir. 2016) (obviousness is question of law based on underlying facts); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406-07 (2007) (determination of obviousness requires a factual inquiry into (1) the scope and content of the prior art; (2) the level of ordinary skill in the art in the pertinent art; (3) the differences between the prior art and the claimed invention; and (4) extent of any objective indicia of non-obviousness).

3. Whether Claims 17 and 18 of the '881 patent are invalid for lack of written description under 35 U.S.C. § 112.

- Authority: 35 U.S.C. § 112; *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003) (to satisfy written description requirement, patent specification

must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.)

EXHIBIT 6

TQ DELTA, LLC, v. 2WIRE, INC.,
C.A. No. 13-cv-1835-RGA

Code	Ground
401/402	Not relevant. Fed. R. Evid. 401, 402
403	Unduly prejudicial, confusing, wasteful, or cumulative. Fed. R. Evid. 403
701	Improper lay opinion. Fed. R. Evid. 701
702	Improper expert testimony. Fed. R. Evid. 702, 703
802	Hearsay if offered for the truth of the matter asserted. Fed. R. Evid. 802
901	Requires authenticity or identification. Fed. R. Evid. 901
1002	Violates best evidence rule. Fed. R. Evid. 1002
1006	Improper summary. Fed. R. Evid. 1006
CC	Related to claim construction
D	Duplicate
Daub	Subject to exclusion pending Daubert Motion
DESC	Inadequate, misleading, or improper description
F	Lacks foundation/lacks personal knowledge/speculation. Fed. R. Evid. 104, 602, 1003, 1005
FL	Foreign language document
ILL	Illegible
UT	Untimely disclosed/not produced in discovery
MIL	Subject to pending MIL issue
SAN	Subject to pending motion for sanctions
M	Mismatch (marked exhibit and exhibit list description do not match)
NE	Not Evidence
NS	Exhibit not stamped with trial exhibit number
OS	Outside Scope of Rule 30(b)(6) Topic
SJ	Subject to exclusion pending Motion for Summary Judgment

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
1	TQD000132	TQD000146	U.S. Patent No. 7,453,881	10/04/02	PDX 122	
2	TQD000897	TQD001089	File History for USPN 7,453,881	10/04/02		
3			Red Ribbon Copy of U.S. Patent No. 7,453,881	10/04/02		
4			Certified File History for USPN 7,453,881	10/04/02		
5			Certified Patent Assignment 013670/0078	01/17/03		
6			Certified Patent Assignment 029154/0937	10/18/12		
7			Plaintiff TQ Delta, LLC's First Rule 30(b)(6) Deposition Notice	05/27/15	PDX 1	NE
8	2WIRE00001896	2WIRE00001928	DSP Engineering 2Wire ADSL Requirements Specification, Section 4, Version 1.8	11/11/09	PDX 2	
9	2WIRE00001955	2WIRE00001969	DSP Engineering 2Wire ADSL Requirements Specification, Version 1.4	10/20/09	PDX 3	
10	2WIRE00001869	2WIRE00001873	2017 PRD 2Wire 2071 Family Product Requirements Document, Rev. 1.0	04/04/06	PDX 4	401/402, 403
11	2WIRE00004628	2WIRE00004673	503XNV VDSL Product Family Product Requirements Document, Rev. 06	05/15/09	PDX 5	
12	2WIRE00003290	2WIRE00003678		01/26/12	PDX 6	
13			11 page PDF of Topics for Deposition and 2Wire's Responses	No Date	PDX 7	NE
14			10 page PDF - 5600-000172-000_Control_of_Records_Rev.03	07/11/11	PDX 8	401/402
15			Plaintiff TQ Delta, LLC's Second Notice of Rule 30(b)(6) Deposition to 2Wire, Inc.	10/24/17	PDX 9	NE
16			2Wire Inc.'s Supplemental Responses to TQ Delta LLC's Interrogatories Nos. 1, 6 and 7	05/16/17	PDX 10	

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
17	2WIRE00038743	2WIRE00038747	[REDACTED]	No Date	PDX 11	
18	2WIRE00037840	2WIRE00037842	5268AC Data Sheet	No Date	PDX 12	
19	2WIRE00048927	2WIRE00048928	HomePortal 2070 Data Sheet	06/05	PDX 13	401/402, 403
20	2WIRE00001892	2WIRE00001895	HomePortal 2000 Series Data Sheet	01/07	PDX 14	401/402, 403
21	2WIRE00000711	2WIRE00000712	HomePortal 2701HG Data Sheet	02/08	PDX 15	401/402, 403
22	2WIRE00048929	2WIRE00048930	HomePortal 2700HGV Data Sheet	09/05	PDX 16	401/402, 403
23	2WIRE00000672	2WIRE00000673	HomePortal 3801HGV Data Sheet	12/09	PDX 17	401/402, 403
24	2WIRE00001617	2WIRE00001618	HomePortal iNID Data Sheet i3800V	01/07	PDX 18	401/402, 403
25	2WIRE00001204	2WIRE00001207	HomePortal iNID Data Sheet i3802V	06/08	PDX 19	401/402, 403
26	TQD-2WIRE 000694	TQD-2WIRE 000697	HomePortal iNID Data Sheet i3812V	04/10	PDX 20	
27	2WIRE00000674	2WIRE00000675	4111N Data Sheet	No Date	PDX 21	401/402, 403
28	2WIRE00000676	2WIRE00000677	5031NV Data Sheet	No Date	PDX 22	
29	2WIRE00001573	2WIRE00001574	5111NV Data Sheet	No Date	PDX 23	401/402, 403
30	2WIRE00001575	2WIRE00001576	5168N Data Sheet	No Date	PDX 24	
31	2WIRE00001577	2WIRE00001578	5168NV Data Sheet	No Date	PDX 25	
32	2WIRE00036399	2WIRE00036407	[REDACTED]	09/20/13	PDX 26	
33	2WIRE00001829	2WIRE00001832	HomePortal 5031NV Quick Start Guide	09/29/11	PDX 27	
34	2WIRE00048826	2WIRE00048873	[REDACTED]	12/27/12	PDX 28	
35	2WIRE00046452	2WIRE00046537	[REDACTED]	2014	PDX 29	
36	2WIRE00041709	2WIRE00041746	[REDACTED]	2016	PDX 30	
37			Defendant 2Wire, Inc.'s Objections and Responses to Plaintiff TQ Delta's 5 th Set of Rule 33 Interrogatories	11/15/17	PDX 31	
38	2WIRE00042869	2WIRE00042873	Document Retention Policy	No Date	PDX 32	401/402
39			2Wire's Answer, Affirmative Defenses, and Counterclaims to Second Amended Complaint for Patent Infringement	06/02/14	PDX 33	401/402, 403, NE
40			2Wire, Inc.'s Supplemental Response to	11/10/15	PDX 35	

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			TQ Delta LLC's Interrogatory No. 4			
41	TQD021303	TQD021318	Negotiations Notebook – Tab 1 – Letter from Matthew DelGiorno to Sean McGhie re: DSL Patent Portfolio Licensing	07/15/13	PDX 36	DESC
42	TQD021319	TQD021321	Negotiations Notebook – Tab 2 – Letter from Matthew DelGiorno to Sean McGhie re: DSL Patent Portfolio Licensing	08/06/13	PDX 37	DESC
43	TQD021248	TQD021267	Negotiations Notebook – Tab 3 – Email with attachments from Matthew DelGiorno to Sean McGhie re: TQ Delta/Pace/Patent licensing discussions	08/23/13	PDX 38	DESC
44	2WIRE00047137	2WIRE00047138	Negotiations Notebook – Tab 4 – Email from Matthew DelGiorno to Dave Cordeiro re: TQ Delta/Pace – phone call	09/04/13	PDX 39	DESC
45	2WIRE00047142	2WIRE00047145	Negotiations Notebook – Tab 5 – Email from Matthew DelGiorno to Dave Cordeiro re: TQ Delta/Pace – phone call	10/09/13	PDX 40	DESC
46	2WIRE00047146	2WIRE00047152	Negotiations Notebook – Tab 7 – Email from Matthew DelGiorno to Dave Cordeiro re: TQ Delta/Pace – phone call	10/30/13	PDX 41	DESC
47	2WIRE00047134	2WIRE00047136	Negotiations Notebook – Tab 8 – Email from Matthew DelGiorno to Dave Cordeiro re: Pace	11/01/13	PDX 42	DESC
48	2WIRE00047153	2WIRE00047153	Negotiations Notebook – Tab 9 – Email from Matthew DelGiorno to Dave Cordeiro re: TQ Delta v. Pace/Patent Infringement Suit	11/05/13	PDX 43	DESC
49	TQD-2WIRE 001100	TQD-2WIRE 001100	Negotiations Notebook – Tab 11 – Email from Bernstein to Schuman re: TQ Delta	07/08/15	PDX 44	401/402, 403, 802, DESC, MIL
50	TQD-2WIRE 001101	TQD-2WIRE 001102	Negotiations Notebook – Tab 12 – Email from Bernstein to Schuman re: TQ Delta	07/27/15	PDX 45	401/402, 403, 802, DESC,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
						MIL
51	TQD-2WIRE 001103	TQD-2WIRE 001105	Negotiations Notebook – Tab 13 – Email from Bernstein to Schuman re: TQ Delta	08/03/15	PDX 46	401/402, 403, 802, DESC, MIL
52	TQD-2WIRE 001110	TQD-2WIRE 001113	Negotiations Notebook – Tab 14 – Email from Schuman to Bernstein re: TQ Delta	08/04/15	PDX 47	401/402, 403, 802, DESC, MIL
53	TQD-2WIRE 001114	TQD-2WIRE 001114	Negotiations Notebook – Tab 16 – Email from Bernstein to Schuman re: TQ Delta	08/17/15	PDX 48	401/402, 403, 802, DESC, MIL
54	TQD-2WIRE 001115	TQD-2WIRE 001116	Negotiations Notebook – Tab 17 – Email from Schuman to Bernstein re: TQ Delta	08/31/15	PDX 49	401/402, 403, 802, DESC, MIL
55	TQD-2WIRE 001117	TQD-2WIRE 001119	Negotiations Notebook – Tab 18 – Email from Bernstein to Schuman re: TQ Delta	09/07/15	PDX 50	401/402, 403, 802, DESC, MIL
56	TQD-2WIRE 001120	TQD-2WIRE 001168	Negotiations Notebook – Tab 19 – Email (and attachment) from Bernstein to Schuman re: TQ Delta/Arris	05/09/17	PDX 51	401/402, 403, 802, DESC, MIL
57	2WIRE00048895	2WIRE00048903	[REDACTED]	02/15/11	PDX 52	401/402, 403
58	2WIRE00048904	2WIRE00048925	[REDACTED]	12/24/14	PDX 53	401/402, 403
59	2WIRE00051146	2WIRE00051154	[REDACTED]	05/28/09	PDX 54	401/402, 403
60	2WIRE00051796	2WIRE00051833	[REDACTED]	02/02/99	PDX 55	401/402, 403
61	2WIRE00051834	2WIRE00051837	Amendment A to Agreement at #55	05/19/00	PDX 56	401/402, 403
62	TQD078668	TQD078919	ITU-T G.993.2	02/2006	PDX 57	
63	2WIRE00047897	2WIRE00047930	2Wire ITU-T SG15/Q4 Meeting Report (Krista S. Jacobsen & Hossein Sedarat)	01/17/05	PDX 62	401/402, 403, 802
64			2Wire, Inc.'s Supplemental Objections	06/28/17	PDX 63	

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			and Response to TQ Delta's Interrogatory No. 12			
65	2WIRE00042943	2WIRE00043178	[REDACTED]	12/03/09	PDX 64	MIL, 401/402, 403, 802
66	2WIRE00037997	2WIRE00037999	[REDACTED]	03/02/16	PDX 65	MIL, 401/402, 403, 802
67	2WIRE00038000	2WIRE00038001	[REDACTED]	10/04/16	PDX 66	MIL, 401/402, 403, 802
68	2WIRE00048050	2WIRE00048051	[REDACTED]	08/01/17	PDX 67	MIL, 401/402, 403, 802
69	2WIRE00048046	2WIRE00048047	[REDACTED]	08/10/17	PDX 68	MIL, 401/402, 403, 802
70	2WIRE00048048	2WIRE00048049	[REDACTED]	10/27/17	PDX 69	MIL, 401/402, 403, 802
71			Defendant 2Wire, Inc.'s Supplemental Responses to Plaintiff TQ Delta LLC's Fourth Set of Rule 33 Interrogatories	12/21/17	PDX 71	
72			2Wire Inc.'s Responses and Objections to TQ Delta LLC's First Set of Interrogatories	11/13/14	PDX 72	
73			2Wire Inc.'s Supplemental Response to TQ Delta LLC's Interrogatory Nos. 3 and 6	07/14/15	PDX 73	
74			2Wire Inc.'s Second Supplemental Response to TQ Delta LLC's Interrogatory No. 6	11/16/16	PDX 74	
75	2WIRE00052100	2WIRE00052100	[REDACTED]	No Date	PDX 88	401/402, 403
76	2WIRE00041539	2WIRE00041632	[REDACTED]	10/17/16	PDX 89	401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
77	2WIRE00051255	2WIRE00051337	2Wire Management Presentation	No Date	PDX 90	401/402, 403
78			Plaintiff TQ Delta, LLC's Amended 2 nd Notice of 30b6 Deposition to 2Wire	08/07/18	PDX 91	NE
79			Plaintiff's Notice of Deposition	08/28/18	PDX 92	NE
80	TQD077648	TQD078051	ITU-T G.992.3	04/2009	PDX 93	
81	TQD114197	TQD114306	ITU-T G.992.5	01/2009	PDX 94	
82	TQD114647	TQD115022	ITU-T G.993.2	12/2011	PDX 95	
83	TQD115442	TQD115459	ITU-T G.998.2	01/2005	PDX 96	
84	TQD112245	TQD112884	IEEE Standard 802.3ah - 2004	09/07/04	PDX 97	
85	2WIRE00042024	2WIRE00042043	[REDACTED]	07/13/12	PDX 98	
86	2WIRE00004082	2WIRE00004603	BCM63168 Data Sheet	01/24/14	PDX 99	
87	2WIRE00005009	2WIRE00005009	[REDACTED]	No Date	PDX 100	
88	2WIRE00005009	2WIRE00005009	Hard copy – portion of excel – 5168 NV	No Date	PDX 101	D
89			2Wire Inc.'s Second Supplemental Objections and Responses to TQ Delta LLC's Sixth Set of Interrogatories (No. 18)	06/22/18	PDX 102	
90	TQD017521	TQD017522	5031NV Data Sheet	No Date	PDX 103	
91	2WIRE00052086	2WIRE00052086	5031NV-030 Block Diagram	No Date	PDX 104	
92	2WIRE00003685	2WIRE00004075	BCM6368 Data Sheet	01/16/14	PDX 105	
93	2WIRE00005009	2WIRE00005009	Hard copy – portion of excel – 5031NV	No Date	PDX 106	D
94	2WIRE00004805	2WIRE00004822	Gateway Product Requirement Document iNIDv2, Version 2.2	07/01/08	PDX 107	401/402, 403
95	2WIRE-SC-0000037	2WIRE-SC-0000041	2Wire Source Code Manifest	No Date	PDX 108	
96	2WIRE00005009	2WIRE00005009	Hard copy – portion of excel – i3812V	No Date	PDX 109	D
97	2WIRE00022998	2WIRE00022998	Excel - 4111N Requirement	No Date	PDX 110	D
98	2WIRE00022998	2WIRE00022998	Hard copy – portion of excel – 4111N	No Date	PDX 111	D
99	TQD-2WIRE 001310	TQD-2WIRE 001324	US 7,443,916 – Sedarat – 2Wire patent – Method and Apparatus for	11/24/03	PDX 112	401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Communication in the Presence of Impulse Noise			
100			ITU – Question 4/15 – Temporary Document SI-045 – Source: 2Wire – VDSL2: Proposal for Impulse Noise Mitigation Scheme for VDSL2	10/18/04	PDX 113	401/402, 403, 901, F
101			Patent Statement and Licensing Declaration – 2Wire – G.993.2 VDSL2 Recommendation	07/29/05	PDX 114	401/402, 403, 901, F
102			Expert Report of Richard J. Eichmann for Family 1 (with exhibits and appendices)	11/09/18	PDX 115	NE, 401/402, 403
103			Common Patent Policy for ITU-T/ITU-R/ISO/IEC	2018	PDX 116	
104	TQD115660	TQD115681	[REDACTED]	11/30/17	PDX 117	401/402, 403, 802, 901, F
105	TQD 139062	TQD 139083	[REDACTED]	12/06/18	PDX 118	401/402, 403, 802, 901, F
106			Geradin Article “The Complements Problem within Standard Setting: Assessing the Evidence on Royalty Stacking”	04/25/08	PDX 119	401/402, 403, 802
107			2Wire Inc.’s Fourth Supplemental Response to TQ Delta LLC’s Interrogatory No. 6	09/12/18	PDX 120	
108			Reply Report of Todor Cooklev on Behalf of Plaintiffs Regarding Infringement of U.S. Patent No. 7,453,881 (report only)	12/21/18	PDX 123	NE, 802
109			Opening Report of Todor Cooklev Regarding Infringement of U.S. Patent No. 7,453,881 (report only)	11/02/18	PDX 124	NE, 802
110	TQD000184	TQD000199	US 7,809,028 – Tzannes	10/08/08	PDX 125	
111	TQD000267	TQD000281	US 7,978,706 – Tzannes	04/28/10	PDX 126	

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
112	TQD000407	TQD000423	US 8,422,511 – Tzannes	05/20/10	PDX 127	
113	TQD041100	TQD041117	US 8,831,031 – Tzannes	04/15/13	PDX 128	401/402, 403
114	TQD041118	TQD041135	US 9,014,193 – Tzannes	08/21/14	PDX 129	401/402, 403
115			Non-Binding Term Sheet for License under TQ Delta Patent Portfolio Siemens DSL Products	06/15/17	PDX 132	401/402, 403, 802, 901, F
116			Opening Expert Report of Dr. Krista S. Jacobsen for Family 1 Patents (with Appendices A & B)	10/12/18	PDX Jacobsen 1	401/402, 403, NE
117			Rebuttal Expert Report of Dr. Krista Jacobsen for Family 1 Patents (with Appendices A & B)	11/09/18	PDX Jacobsen 2	401/402, 403, NE
118			Reply Expert Report of Dr. Krista S. Jacobsen for Family 1 Patents	11/30/18	PDX Jacobsen 3	NE
119			Jacobsen Declaration from IPR re: 7,292,627 with exhibits	11/05/14	PDX Jacobsen 5	401/402, 403
120			US 5,479,447 – Chow	05/03/93	PDX Jacobsen 6	401/402, 403
121	TQD030661	TQD030678	US 6,434,119 – Wiese	07/07/98	PDX Jacobsen 7	401/402, 403
122	TQD022234	TQD022255	US 6,636,603 – Milbrandt	07/30/99	PDX Jacobsen 8	401/402, 403
123	TQD031711	TQD031718	US 6,788,705 – Rango	01/18/00	PDX Jacobsen 9	401/402, 403
124	TQD043009	TQD043264	ITU-T G.992.1	06/99	PDX Jacobsen 10	401/402, 403
125			Opening Expert Report of Dr. Krista S. Jacobsen for Family 2 Patents	11/02/18	PDX Jacobsen 11	NE
126			Reply Expert Report of Dr. Krista S. Jacobsen for Family 2 Patents	12/21/18	PDX Jacobsen 12	NE
127			Rebuttal Expert Report of Dr. Krista S. Jacobsen on Non-Infringement of Family 2 Patents	11/30/18	PDX Jacobsen 13	NE
128	2WIRE00030964	2WIRE00031098	Inverse Multiplexing For ATM (IMA)	07/97	PDX	

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Specification Version 1.0		Jacobsen 14	
129	2WIRE00031817	2WIRE00031832	US 6,956,872- Djokovic	05/22/01	PDX Jacobsen 15	
130	2WIRE00026281	2WIRE00026297	US 6,222,858- Counterman	02/10/99	PDX Jacobsen 16	
131			ResearchGate Cell Transfer Delay Monitoring in ATM Networks	01/01	PDX Jacobsen 17	
132			ATM, Networks and LANs (Faulker and Harmer)	No Date	PDX Jacobsen 18	
133			Estimating Call Transfer Delay in ATM Networks Using In-Service Monitoring Methods	No Date	PDX Jacobsen 19	
134	2WIRE00028268	2WIRE00028294	US 7,068,657- Keller-Tuberg	01/18/02	PDX Jacobsen 20	
135	2WIRE00031501	2WIRE00031530	International Application Published Application Number WO 99/39468 - Edvardsen	08/05/99	PDX Jacobsen 21	
136	2WIRE00026803	2WIRE00026814	US 6,772,388 - Cooper	12/06/00	PDX Jacobsen 22	
137			Opening Expert Report on Invalidity of Dr. Krista S. Jacobsen for Family 3 Patents with Appendices	11/28/18	PDX Jacobsen 23	NE
138			Reply Expert Report of Dr. Krista S. Jacobsen for Family 3 Patents (report only)	01/18/19	PDX Jacobsen 24	NE
139			Rebuttal Expert Report on Non-Infringement of Dr. Krista S. Jacobsen for Family 3 Patents with Appendices	12/28/18	PDX Jacobsen 25	NE
140			US 5,764,649 – Tong	03/29/96	PDX Jacobsen 26	
141			Fundamentals of DSL Technology – Excerpt – Chapter 9 Error Control Coding in DSL Systems	2006	PDX Jacobsen 27	
142	2WIRE00028340	2WIRE00028353	US 7,269,208 – Mazzoni	07/11/01	PDX	401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
					Jacobsen 28	
143	2WIRE00030957	2WIRE00030963	LB-031	06/14/04	PDX Jacobsen 29	401/402, 403
144	2WIRE00030729	2WIRE00030956	ITU-T G.993.1	06/2004	PDX Jacobsen 30	401/402, 403
145	2WIRE00052246	2WIRE00052424	ITU-T G.992.2	06/99	PDX Jacobsen 31	401/402, 403
146	2WIRE00028366	2WIRE00028378	US 5,751,741 – Voith	11/20/96	PDX Jacobsen 32	401/402, 403
147	2WIRE00052176	2WIRE00052184	US 6,707,822 – Fadavi-Ardekani	01/07/00	PDX Jacobsen 33	401/402, 403
148			TQ Delta's Notice of Deposition of Dr. Martin Walker	02/04/19	PDX Walker 1	NE
149			Rebuttal Expert Report of Dr. Martin Walker [REDACTED] – Family 2 Patents	11/29/18	PDX Walker 2	NE
150			Rebuttal Expert Report of Dr. Martin Walker [REDACTED] Family 3 Patents	12/28/18	PDX Walker 3	NE
151			[REDACTED]	09/07/17	PDX Walker 4	NE
152			[REDACTED]	05/17/18	PDX Walker 5	NE
153			2Wire Inc.'s Supplemental Objections and Responses to TQ Delta LLC's Sixth Set of Interrogatories (No. 18)	06/08/18	PDX Walker 6	
154			Claim Construction Order for Family 2 Patents	02/13/18	PDX Walker 8	NE
155			US 8,276,048	10/11/10	PDX Walker 9	401/402, 403
156			US 8,495,473	08/06/12	PDX Walker	401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

[illegible]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

[illegible]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
192			TQ Delta's First Set of Interrogatories	10/14/14		NE
193			2Wire Inc.'s Responses and Objections to TQ Delta, LLC's First Set of Interrogatories (Exhibit A)	11/12/14		
194			Responses to TQ Delta's First Set of Requests for Production of Documents and Things	11/13/14		
195			2Wire's Responses and Objections to 2 nd Set of Interrogatories (No. 10)	12/18/14		
196			2Wire's Supplemental Response to Interrogatory No. 7	01/07/15		
197			2Wire's Supplemental Response to TQ Delta's Interrogatory No 7	01/09/15		
198			2Wire's Non-Infringement Contentions and Supplemental Responses to 1 st Set of Interrogatories (Nos. 2 and 3)	03/20/15		
199			2Wire's Supplemental Responses to 1 st Set of Interrogatories (Nos. 3 & 6)	07/15/15		
200			TQ Delta, LLC's Third Supplemental Response to the Defendants' Joint Interrogatory No. 2 with Verification	07/17/15		802
201			2Wire, Inc.'s Objections and Response to TQ Delta LLC's Second Set of Requests for Production of Documents and Things	09/11/15		
202			TQ Delta LLC's Supplemental Responses to the Defendants' Joint Interrogatories Nos. 1, 2, 5, and 6	11/10/15		802
203			TQ Delta LLC's Second Supplemental Response to the Defendants' Joint Interrogatory No. 2	11/25/15		802
204			Defendant 2Wire, Inc.'s Objections and Response to Plaintiff TQ Delta LLC's Third Set of Requests for Production of	09/01/16		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Documents and Things			
205			2Wire's Responses and Objections to 3 rd Set of Rogs (Nos. 11 – 12)	04/28/17		
206			2Wire, Inc.'s Objections and Responses to Plaintiff TQ Delta LLC's Fourth Set of Request for Production of Documents and Things	04/28/17		
207			2Wire's Responses and Objections to 4 th Set of Rogs (No. 13)	08/07/17		
208			TQ Delta, LLC's Second Supplemental Response to the Defendants' Joint Interrogatory No. 1 and Supplemental Response to Joint Interrogatory No. 3	09/29/17		802
209			TQ Delta's Fifth Set of Rule 33 Interrogatories	10/11/17		802
210			TQ Delta, LLC's Responses to 2Wire's Second Set of Individual Interrogatories	11/15/17		802
211			2Wire's Responses and Objections to 5 th Set of Rogs (Nos. 14-17)	11/16/17		
212			TQ Delta's Responses to Defendants 2 nd Set of Joint Interrogatories Nos. 7-14	11/17/17		802
213			2Wire's Supplemental Objections & Responses to 2 nd Set of Interrogatories (Nos. 10)	03/09/18		
214			TQ Delta, LLC's Supplemental Response to 2Wire, Inc.'s Interrogatory No. 16	04/20/18		802
215			2Wire's Responses to 6 th Set of Interrogatories (No. 18)	05/21/18		
216			2Wire's Objections and Responses to 7 th Set of Interrogatories (No. 19)	06/06/18		
217			2Wire's Supplemental Response to 5 th Set of Interrogatories (No. 15)	06/08/18		
218			TQ Delta, LLC's Third Supplemental	07/17/18		802

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Response to 2Wire, Inc.'s Joint Interrogatory No. 2 (Appendix A)			
219			2Wire's 2 nd Supplemental Response to TQD's Interrogatory No. 2	09/11/18		
220			2Wire's Supplemental Responses to Interrogatory Nos. 3, 4, 8, 14 and 15	10/01/18		
221			Complaint for patent infringement. <i>TQ Delta, LLC v. 2Wire</i> , D. Del., C. A. No. 13-cv-1835-RGA	11/04/13		401/402, 403, 802, 901, 1005, NE
222			Complaint for Patent Infringement between TQ Delta and Zhone	11/04/13		401/402, 403, 802, 901, 1005, NE
223			<i>TQ Delta, LLC v. Zhone Technologies, Inc.</i> , D. Del., C.A. No. 13-cv-1836-RGA, First Amended Complaint for Patent Infringement	11/20/13		401/402, 403, 802, 901, 1005, NE
224			Complaint for Patent Infringement (TQ Delta vs. Zyxel)	12/09/13		401/402, 403, 802, 901, 1005, NE
225			Amended Complaint for Patent Infringement, TQ Delta, LLC vs. Adtran, Inc.	07/07/15		401/402, 403, 802, 901, 1005, NE
226			Third Amended Complaint for Patent Infringement (TQ Delta vs. 2WIRE)	10/13/17		401/402, 403, 802, 901, 1005, NE
227			Expert Report of Dr. Kevin C. Almeroth – Family 1 – 2Wire with Attachments	10/09/18 (10/12/18)		401/402, 403, 802, NE
228			Expert Report of Arthur Brody, Ph.D. with Attachments	10/12/18		401/402, 403, 802, NE
229			Expert Report of Todor Cooklev Regarding the Testing and Operation of Certain Accused 2Wire Products with Exhibits	10/12/18		401/402, 403, 802, NE
230			Expert Report of Dr. Kevin C. Almeroth	10/30/18		802, NE

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			– Family 2 – 2Wire with Attachments	(served 11/02/18)		
231			Expert Rebuttal Report of Arthur Brody, Ph.D., Regarding Validity of U.S. Patent No. 7,889,784 with Attachments	11/09/18		401/402, 403, 802, NE
232			Rebuttal Expert Report of Dr. Todor Cooklev	11/29/18		802, NE
233			Almeroth Corrected Attachment I	11/30/18		802, NE
234			Expert Reply Report of Arthur Brody, Ph.D., Regarding Infringement of U.S. Patent No. 7,889,784 with Attachments	11/30/18		401/402, 403, 802, NE
235			Reply Expert Report of Dr. Todor Cooklev Regarding the Testing and Operation of Certain Accused 2Wire Products with Attachments	11/30/18		401/402, 403, 802, NE
236			Errata to the Expert Report of Richard Eichmann (F1) with Exhibits	12/17/18		
237			Expert Sur-Reply Report of Arthur Brody, Ph.D., Regarding Validity of U.S. Patent No. 7,889,784	12/19/18		401/402, 403, 802, NE
238			Reply Expert Report of Dr. Kevin Almeroth – Family 2 – 2Wire	12/13/18 (served 12/21/18)		802, NE
239			Reply Expert Report of Dr. Kevin C. Almeroth – Family 3 – 2Wire (with Attachments E and M)	01/18/19		401/402, 403, 802, NE
240			Expert Reply Report of Dr. Cooklev F3 with Exhibit	01/18/19		401/402, 403, 802, NE
241			Supplemental Expert Report of Dr. Martin Walker [REDACTED] [REDACTED] – Family 3 Patents	02/04/19		401/402, 403
242			Supplemental Expert Report of Dr. Martin Walker [REDACTED]	02/05/19		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)




PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			 – Family 2			
243			Kevin Almeroth CV			401/402, 403, 802
244			Jay Bhatia CV			401/402, 403, 802
245			Arthur Brody, Ph.D. CV			401/402, 403, 802
246			Todor Cooklev CV			401/402, 403, 802
247			Peter Heller CV			401/402, 403, 802
248	PIZ000001	PIZ000003	Robert Pizzano CV		DDX 538	401/402, 403, 802
249			Vivek Shinde CV			401/402, 403, 802
250			Parties' Joint Claim Construction Brief for the Family 1 Patents (Dkt #342)	08/22/17		401/402, 403, 802, 901, CC, NE
251			Parties' Joint Claim Construction Brief F2, Dkt. # 346	08/30/17		401/402, 403, 802, 901, CC, NE
252			F1 Claim Construction Memorandum Opinion Dkt. No. 477	01/30/18		401/402, 403, NE
253			Claim Construction Order F1	02/06/18		401/402, 403, NE
254			Memorandum Opinion for Family 2, Dkt #486	02/07/18		NE
255						401/402, 403, NE
256						802, NE
257			Almeroth Table Product/Chip			802, NE
258			Cited Docs 1) Computer Architecture			802, F

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Course Info; 2) Microsoft Computer Dictionary 4 th ed.; 3) IEEE 100 7 th ed.; 4) Mepits Hardware Description Language; 5) Simic Accelerating algorithms in hardware			
259	TQD077212	TQD077647	G.992.3	01/2005		
260			G.992.5	01/2005		
261			IEEE 802.3-2008			
263						802, DESC
264			Infringement Contentions of TQ Delta, LLC for US Patent 7,453,881	01/30/17		401/402, 403, 802, 901, 1006, NE
265			TQ Delta's Final Claim Charts for US Patent 7,453,881	07/02/18		401/402, 403, 802, 901, 1006, NE
266			TQ Delta's Corrected Claim Charts/Appendices for '881	09/04/18		401/402, 403, 802, 901, 1006, NE
267			Opening Report of Todor Cooklev Regarding Infringement of U.S. Patent No. 7,453,881 with Attachments	11/02/18		401.402, 403, 802, NE
268	TQD-2WIRE 000564	TQD-2WIRE 000575	Test PA51-ZY17-B1-090915-114530 (G.993.2 – 5168NV)			401/402, 403, Daub, 802, NE
269			Claim Chart - Infringement Contentions: U.S. Patent 7,453,881 Claim(s) 17, 18 - 2Wire/Pace 5168NV () (Chart No. 2.5158NV.1) – Infringement Support - ITU-T G.998.2 Ethernet-Bonding Standard	07/02/18		401/402, 403, 802, 901, 1006, NE
270			Claim Chart - Infringement Contentions:	07/02/18		401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			U.S. Patent 7,453,881 Claim(s) 17, 18 - 2Wire/Pace i3812V [REDACTED] – Infringement Support – ITU-T G.998.2 Ethernet-Bonding Standard			802, 901, 1006, NE
271			Code Appendix - Infringement Contentions: APPENDIX 2.1 - TQ Delta Infringement Contentions for U.S. Patent 7,453,881 - STANDARD G.998.2 – SOURCE CODE SET BCM6091	07/02/18		401/402, 403, 802, 901, 1006, NE
272			Code Appendix - Infringement Contentions: APPENDIX 2.2 - TQ Delta Infringement Contentions for U.S. Patent 7,453,881 - STANDARD G.998.2 (Ethernet-Bonding) – SOURCE CODE SET [REDACTED]	07/02/18		401/402, 403, 802, 901, 1006, NE
273	TQD115406	TQD115441	ITU-T G.998.1 (G.bond ATM)	01/2005		
274			ITU-T G.993.5	04/2010		
275	TQD017527	TQD017528	5168NV Data Sheet	No Date		
276	TQD037333	TQD037364	DSL Forum Technical Report TR-042 – ATM Transport over ADSL Recommendation (August 2001)	08/2001		401/402, 403
277	TQD135589	TQD135664	Spirent DLS-8234 Operating Manual VDSL2 Wireline Simulator Europe	05/2006		401/402, 403, 802, 901, F
278	TQD135461	TQD135588	Spirent Operating Manual DLS-410B North American ADSL2++ Wireline Simulator	06/2007		401/402, 403, 802, 901, F
279	COOKLEV 02580	COOKLEV 02595	<i>Implementation and Applications of DSL Technology</i> , edited by Philip Golden Herve Dedieu, and Krista S. Jacobsen, 2008, at pp. 560-565	2008		
280	2WIRE00007648	2WIRE00007713	2Wire 5138/5168N(V) Product	02/23/10		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Requirements Document			
281	2WIRE00008300	2WIRE00008323	[REDACTED]	07/22/11		
282	2WIRE00008156	2WIRE00008165	[REDACTED]	02/20/13		
283	2WIRE00007996	2WIRE00008009	[REDACTED]	12/18/13		
284	2WIRE00052031	2WIRE00052085	[REDACTED]	01/13/14		
285			About ITU from ITU Website			401/402, 403, 802, 901, F
286			Royalty rate calculation for essential TQ Delta DSL Patents			401/402, 403, 802, DESC, NE
287			TQ Delta rate card			401/402, 403, 802, DESC, NE
288			2Wire summary of damages for Family 2			401/402, 403, 802, DESC, NE
289			TQ Delta asserted patent families			401/402, 403, 802, DESC, NE
290			Summary of 2Wire agreements			401/402, 403, 802, DESC, NE
291			Relevant and irrelevant terms in Aware's agreement			401/402, 403, 802, DESC, NE
292			FTTP vs. FTTx (DSL) costs summary			401/402, 403, 802, DESC, NE
293			Fiber vs. FTTx (DSL) costs saving regression results			401/402, 403, 802, DESC, NE
294			Expected DSL-essential patent families			401/402, 403, 802, DESC, NE
295			TQ Delta patent family rates			401/402, 403, 802, DESC, NE

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
296			Broadband internet service subscriptions and market penetration in the U.S. (2005-1H2016)			401/402, 403, 802, DESC, NE
297			History of Aware license reassignment			401/402, 403, 802, 1006, DESC, NE
298			Cost of FTTP and DSL + FTTx			401/402, 403, 802, DESC, NE
299			DSL Patent Sampling			401/402, 403, 802, DESC, NE
300			Plaintiff TQ Delta's Identification of Accused Products and Asserted Patents	04/25/14		401/402, 403, NE
301			[REDACTED]	12/08/16		401/402, 403, 1006, NE
302			Third and Final Scheduling Order	04/10/17		401/402, 403, NE
303	TOD017525	TOD017526	5168N Data Sheet	No Date		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

[illegible]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
1	1	1	1	1		
2	2	2	2	2		
3	3	3	3	3		
4	4	4	4	4		
5	5	5	5	5		
6	6	6	6	6		
7	7	7	7	7		
8	8	8	8	8		
9	9	9	9	9		
10	10	10	10	10		
11	11	11	11	11		
12	12	12	12	12		
13	13	13	13	13		
14	14	14	14	14		
15	15	15	15	15		
16	16	16	16	16		
17	17	17	17	17		
18	18	18	18	18		
19	19	19	19	19		
20	20	20	20	20		
21	21	21	21	21		
22	22	22	22	22		
23	23	23	23	23		
24	24	24	24	24		
25	25	25	25	25		
26	26	26	26	26		
27	27	27	27	27		
28	28	28	28	28		
29	29	29	29	29		
30	30	30	30	30		
31	31	31	31	31		
32	32	32	32	32		
33	33	33	33	33		
34	34	34	34	34		
35	35	35	35	35		
36	36	36	36	36		
37	37	37	37	37		
38	38	38	38	38		
39	39	39	39	39		
40	40	40	40	40		
41	41	41	41	41		
42	42	42	42	42		
43	43	43	43	43		
44	44	44	44	44		
45	45	45	45	45		
46	46	46	46	46		
47	47	47	47	47		
48	48	48	48	48		
49	49	49	49	49		
50	50	50	50	50		
51	51	51	51	51		
52	52	52	52	52		
53	53	53	53	53		
54	54	54	54	54		
55	55	55	55	55		
56	56	56	56	56		
57	57	57	57	57		
58	58	58	58	58		
59	59	59	59	59		
60	60	60	60	60		
61	61	61	61	61		
62	62	62	62	62		
63	63	63	63	63		
64	64	64	64	64		
65	65	65	65	65		
66	66	66	66	66		
67	67	67	67	67		
68	68	68	68	68		
69	69	69	69	69		
70	70	70	70	70		
71	71	71	71	71		
72	72	72	72	72		
73	73	73	73	73		
74	74	74	74	74		
75	75	75	75	75		
76	76	76	76	76		
77	77	77	77	77		
78	78	78	78	78		
79	79	79	79	79		
80	80	80	80	80		
81	81	81	81	81		
82	82	82	82	82		
83	83	83	83	83		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
						802
333			Leo Tan Wee Hin and R. Subramaniam, "Asymmetric Digital Subscriber Line - INTRODUCTION, BACKGROUND, ADSL TECHNOLOGY, Signal Modulation, Code and Error Correction, Framing and Scrambling, STANDARDS FOR ADSL," Encyclopedia.Jrank.org, Web. ("ADSL – Introduction")	No Date		401/402, 403, 802
334			"What is a Dialup Internet Service", WhatIsMyIPAddress.com, Web.	No Date		401/402, 403, 802
335			Beal, Vangie. "Broadband Definition." Webopedia	No Date		401/402, 403, 802
336			"The Past, Present & Future: DSL Vs. Cable Vs. Fiber Optic Networks," Web	No Date		401/402, 403, 802
337			"Evolution of the SBC and AT&T Brands: A Pictorial Timeline." AT&T	No Date		401/402, 403, 802
338			DSL Reports; Michal Miturski, Angel Mirkovski, Igor Sacevski, "ADSL," University of Salzburg, Salzburg, Austria	No Date		401/402, 403, 802
339			"DSL Technology Evolution," Broadband Forum	No Date		401/402, 403, 802
340			"Difference Between ADSL and VDSL," DifferenceBetween.net, Web.	No Date		401/402, 403, 802
341			Benefits of Pair-Bonded VDSL2, ZyXEL, Web.	No Date		401/402, 403, 802
342			Vectored VDSL2 (Vectoring), Assia Inc., Web.	No Date		401/402, 403, 802
343			What is VDSL Vectoring, SRA and G.INP," DrayTek, April 2, 2016. Web	04/02/16		401/402, 403, 701, 702, 802
344			Errata – Rebuttal Report of Dr. Todor Cooklev	01/24/19		401/402, 403, NE
345	2WIRE00029898	2WIRE00030083	ANSI T1.413 Issue 1	1995		
346			ATM Forum Traffic Management	04/1996		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Specification (af-tm-0056, April 1996) – Section 3.1			
347			[REDACTED]			401/402, 403, 802, 1006, NE, DESC
348			TQ Delta v. 2Wire et al., Hearing Transcript	05/05/15		401/402, 403, NE
349	TQD137303	TQD137358	TR-159 Management Framework for xDSL Bonding	12/08		
350	TQD137084	TQD137227	TR-114 VDSL2 Performance Test Plan	11/09		
351	TQD137228	TQD137302	TR-115 VDSL2 Functionality Test Plan	11/09		
352			TR-105 ADSL2/ADSL2plus Functionality Test Plan	02/2010		
353	COOKLEV 02596	COOKLEV 02622	TR-273 Testing of Bonded, Multi-Pair xDSL Systems	08/2012		
354	2WIRE00036872	2WIRE00036872	Excel	No Date		401/402, 403
355	2WIRE00042942	2WIRE00042942	Excel	No Date		401/402, 403
356	2WIRE00052087	2WIRE00052087	Excel	No Date		401/402, 403
357	2WIRE00052092	2WIRE00052092	Excel	No Date		401/402, 403
358	2WIRE00052096	2WIRE00052096	Excel	No Date		401/402, 403
359	2WIRE00052534	2WIRE00052534	Excel	No Date		401/402, 403
360	2WIRE00052535	2WIRE00052535	Excel	No Date		401/402, 403
361			Rugged Communications Equipment for Harsh Environments, Siemens	12/11/18		401/402, 403, 802
362			Transcript of Scheduling Conference Before the Honorable Richard G. Andrews	03/03/17		401/402, 403, NE
363			U.S. Patent 4,330,687			401/402, 403, UT
364			U.S. Patent 4,476,559			401/402, 403, UT
365			U.S. Patent 4,924,492			401/402, 403, UT
366	AWARE001791	AWARE001861	Patent Purchase Agreement between			401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

[illegible]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
384	TQD036966	TQD036968	Assignments 013670/0078 & 029154/0937 & USPTO Patent Assignment Abstract of Title			Compound
	TQD036981	TQD037015				
385	2WIRE00037831	2WIRE00037833	5268AC Data Sheet			
386	2WIRE00005009	2WIRE00005009	[REDACTED] for the 5268AC Product (Excerpt)			
387			Cooklev Submission re: Extended Data Rate 802.11a	03/2002		401/402, 403
388			DSL Forum Marketing Report MR-001, DSL Anywhere – Issue 2	09/2004		401/402, 403
389			Broadband Forum TR-197	08/2012		401/402, 403
390			Analysis of the Impact of Impulse Noise in Digital Subscriber Line Systems by Nedev	03/2003		401/402, 403
391			Fundamentals of DSL Technology (excerpt – pgs 122-125)	2006		DUP
392			Plaintiff TQ Delta, LLC's Non-Final Claims Charts for Representative Claims on Products [REDACTED]	[REDACTED]		[REDACTED]
			[REDACTED]	[REDACTED]		[REDACTED]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
394			TQ Delta, LLC's Final Claim Charts for Products [REDACTED]	07/02/18		401/402, 403, 802, 1006, NE
395			Email from Walsh to Counsel serving Walker's Supplemental Report	02/05/19		401/402, 403, NE
396			Email from Peter McAndrews to Counsel re: Walker's late expert report	02/07/19		401/402, 403, NE
397			Email from Walsh to Prange re: deposition dates	01/27/19		401/402, 403, NE
398	2WIRE00005009	2WIRE00005009	Excerpt from the [REDACTED] for 5268AC			DUP
399			Plaintiff TQ Delta, LLC's Final Claim Charts for Products that [REDACTED]	07/02/18		401/402, 403, 802, 1006, NE
400			2019 Revised Patent Subject Matter Eligibility Guidance	12/29/18		401/402, 403, NE
401			"Fundamentals of DSL Technology" by Golden, Dedieu and Jacobsen (Entire Book)	2006		DUP
402			"Implementation and Applications of DSL Technology", Golden, Dedieu and Jacobsen (ENTIRE BOOK)	2008		DUP
403	TQD 138197	TQD 138302	Stout Risius Ross, Inc. 2013 Report	02/10/14		401/402, 403, 802, F
404	TQD 138303	TQD 138442	Stout Risius Ross, Inc. 2014 Report	02/19/15		401/402, 403, 802, F
405	TQD 138443	TQD 138508	Stout Risius Ross, Inc. 2015 Report	02/18/16		401/402, 403, 802, F
406	TQD 138509	TQD 138578	Stout Risius Ross, Inc. 2016 Report	03/20/17		401/402, 403, 802, F
407	TQD 138579	TQD 138658	Stout Risius Ross, Inc. 2017 Report	02/20/18		401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
						802, F
408	TQD 020457	TQD 020458	Patent Statement and Licensing Declaration re: G.992.3 – ADSL2 Annex C	04/26/04		401/402, 403
409	TQD 020497	TQD 020499	Patent Statement and Licensing Declaration re: G.993.2 amd1 – VDSL2	01/18/12		401/402, 403
410			Guidelines for Implementation of ITU-T Patent Policy	03/12/05		401/402, 403
411	TQD021322	TQD021324	Confidentiality & FRE 408 Agreement between TQ Delta, LLC and Pace Americas, Inc.	12/16/13		
412	TQD-2WIRE 001170	TQD-2WIRE 001171	Email from Bernstein to Schuman re: TQ Delta/Arris	05/22/17		401/402, 403
413	2WIRE00051785	2WIRE00051786	Patent Statement and Licensing Declaration re: G.993.2 – VDSL2 Recommendation			401/402, 403
414			Hearing Transcript	03/21/14		NE
415			Wygliniski, Labeau and Kabal, "Bit Loading with BER-Constraint for Multicarrier Systems"	07/2005		401/402, 403, 802,
416			Tse and Viswanath, "Fundamentals of Wireless Communication", Chapter 5			401/402, 403, 802
417	2WIRE00049169	2WIRE00049186	UNH-IOL DSL Consortium Broadband Forum TR-114i2 Report	07/22/13		
418	2WIRE00054866	2WIRE00054866	7330 Gold Standard Profiles Version 2.0	09/30/14		
419			"Intellectual property rights (IPR) in ITU Recommendations," International Telecommunication Union. (Search Aware & G.992.3)	No Date		401/402, 403 802, F, NE
420			"Intellectual property rights (IPR) in ITU Recommendations," International Telecommunication Union. (Search G.992.3)	No Date		401/402, 403 802, F, NE
421			"Intellectual property rights (IPR) in ITU	No Date		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Recommendations," International Telecommunication Union. (Search G.992.5)			802, F, NE
422			"Intellectual property rights (IPR) in ITU Recommendations," International Telecommunication Union. (Search G.993.2)	No Date		401/402, 403 802, F, NE
423			"Intellectual property rights (IPR) in ITU Recommendations," International Telecommunication Union. (Search G.998.2)	No Date		401/402, 403 802, F, NE
424			Mr. Eichmann's "forward citation analysis" methodology applied to the '784 patent including Exhibit 12a to Errata of Eichmann Report			401/402, 403, 802, 1006, NE
425			ETSI Rules of Procedure	2011		401/402, 403
426	TQD116472	TQD116473	ITU Contribution	10/15/01		401/402, 403
427	TQD116862	TQD116863	ITU Contribution	12/10/01		401/402, 403
428	TQD117903	TQD117904	ITU Contribution	05/21/01		401/402, 403
429			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
			[REDACTED]			[REDACTED]
433			FCC Types of Broadband Connections	06/23/14		401/402, 403, 802,
434			"Computer Architecture" at 3 in the Department of Computing at East Tennessee State University			401/402, 403, 802, INC
435			Definition of "firmware" from the 4th edition of the Microsoft Computer	1999		401/402, 403, 802

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

[illegible]

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Claim 2			
460			Claim Chart - 2Wire-Pace 4111N [REDACTED] [REDACTED] US7,889,784 - ADSL2-2+ - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
461			Claim Chart - 2Wire-Pace 4111N [REDACTED] [REDACTED] US7,889,784 - ADSL2-2+ - Claim 2	07/02/18		401/402, 403, 802, 1006, NE
462			Claim Chart - 2Wire-Pace 5031NV [REDACTED] US7,889,784 - ADSL2-2+ - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
463			Claim Chart - 2Wire-Pace 5031NV [REDACTED] US7,889,784 - ADSL2-2+ - Claim 2	07/02/18		401/402, 403, 802, 1006, NE
464			Claim Chart - 2Wire-Pace 5031NV [REDACTED] US7,889,784 - VDSL2 - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
465			Claim Chart - 2Wire-Pace 5031NV [REDACTED] US7,889,784 - VDSL2 - Claim 2	07/02/18		401/402, 403, 802, 1006, NE
466			Claim Chart - 2Wire-Pace 5168NV [REDACTED] US7,889,784 - ADSL2-2+ - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
467			Claim Chart - 2Wire-Pace 5168NV [REDACTED] US7,889,784 - ADSL2-2+ - Claim 2	07/02/18		401/402, 403, 802, 1006, NE
468			Claim Chart - 2Wire-Pace 5168NV [REDACTED] US7,889,784 - VDSL2 - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
469			Claim Chart - 2Wire-Pace 5168NV [REDACTED] US7,889,784 - VDSL2 - Claim 2	07/02/18		401/402, 403, 802, 1006, NE
470			Claim Chart - 2Wire-Pace i3812V [REDACTED] [REDACTED] US7,889,784 - VDSL2 - Claim 1	07/02/18		401/402, 403, 802, 1006, NE
471			Claim Chart - 2Wire-Pace i3812V [REDACTED]	07/02/18		401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			US7,889,784 - VDSL2 - Claim 2			802, 1006, NE
472			Code Appendix - 1.1 - 784 Patent - Claim 1 - [REDACTED]	07/02/18		401/402, 403, 802, 1006, NE
473			Code Appendix - 1.2 - 784 Patent - Claim 1 - [REDACTED]	07/02/18		401/402, 403, 802, 1006, NE
474			Code Appendix - 1.3 - 784 Patent - Claim 1 - [REDACTED] ase	07/02/18		401/402, 403, 802, 1006, NE
475			Code Appendix - 1.3 - 784 Patent - Claim 1 - [REDACTED]	08/30/18		401/402, 403, 802, 1006, NE
476			Gareth Marples "The History of DSL Internet Access"	05/04/04		401/402, 403, NE
477			DSL A Wiley Tech Brief by Bourne and Burstein	2002		401/402, 403, NE
478			ADSL Technology White Paper (JDSU)			401/402, 403, NE
479			ADSL Technology Explained, Part 1: The Physical Layer by Litwin, Pugel, Rhodes & Richardson	03/01/01		401/402, 403, NE
480			A DFT and FFT Tutorial	06/05/14		401/402, 403, NE
481	TOD074039	TOD074188	ITU-T G.997.1	06/2012		401/402, 403
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
484	TQD135799	TQD136009	DSL Xpert User's Guide Version 4.14	Feb. 2012		401/402, 403, 802, F
485	TQD137409	TQD137453	TR-138 Accuracy Tests for Test Parameters- Issue 1	11/2009		401/402, 403, 802, F
486	TQD-2WIRE000639	TQD-2WIRE000657	Test PA36-AL73-V6B-042216-161830			401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Phase Descrambling ITU Recommendation: VDSL2 (6.993.2), CPE: Pace-2Wire 3600HGV			802, F
487	TQD-2WIRE000998	TQD-2WIRE001017	Test PA50-AL73-A1-102215-091230 SNR Per Subbarrier ITU Recommendation: ADSL2+ (G.992.5), CPE: Pace 5031NV			401/402, 403, 802, F
488	2WIRE00001579	2WIRE00001610	User Guide HomePortal Intelligent Gateway			
489	2WIRE00022877	2WIRE00022890	Hardware Specification 4111N/4112N			401/402, 403
490	TQD-2WIRE 000978	TQD-2WIRE 000997	PA41-AL73-A1-102215-104030 Test (4111N – [REDACTED])			401/402, 403, 802, F, NE, DAUB
491	TQD-2WIRE 001018	TQD-2WIRE 001037	PA50-AL73-V1-102115-143030 Test (5031NV – [REDACTED])			401/402, 403, 802, F, NE, DAUB
492	TQD-2WIRE 001038	TQD-2WIRE 001057	PA51-AL73-A1-102215-095830 Test (5168NV – [REDACTED])			401/402, 403, 802, F, NE, DAUB
493	TQD-2WIRE 001058	TQD-2WIRE 001077	PA51-AL73-V1-102130-155030 Test (5168NV – [REDACTED])			401/402, 403, 802, F, NE, DAUB
494	TQD136922	TQD137083	TR-100	March 2007		401/402, 403, 802, F
495	TQD-2WIRE 001325	TQD-2WIRE 001325	Directory Tree for TQD-2WIRE 001325			401/402, 403, 802, F, NE
496	TQD-2WIRE 000581	TQD-2WIRE 000600	PA36-AL73-V1-050316-094030 Test (3600HGV – Accelity DA87781)			401/402, 403, 802, F, NE
497	TQD017543	TQD017674	iNID User Guide – i3812V			
498	2WIRE00000705	2WIRE00000708	Data Sheet HomePortal 3000	04/2010		
499	TQD135665	TQD135798	Spirent User Guide DLS 5500 xDSL Custom Noise Generator	Feb 2008		401/402, 403
500	TQD136010	TQD136262	VDSL Xpert User's Guide Software Version 3.8.0	Feb 2014		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
501	TQD115128	TQD115255	ITU-T G.997.1	04/2009		401/402, 403
502			1,100 Sampled and Reviewed Patents			NE, DESC
503			132 Second Reviewed Patents			NE, DESC
504			G.992.3 (2009) Corrigendum 1	11/09		401/402, 403
505			G.992.3 (2009) Amendment 1	03/10		401/402, 403
506			G.992.3 (2009) Amendment 2	07/10		401/402, 403
507			G.992.3 (2009) Amendment 3	11/10		401/402, 403
508			G.992.3 (2009) Corrigendum 2	06/11		401/402, 403
509			G.992.3 (2009) Amendment 4	10/11		401/402, 403
510			G.992.3 (2009) Amendment 5	10/12		401/402, 403
511			G.992.3 (2009) Corrigendum 3	08/13		401/402, 403
512			G.992.3 (2005) Erratum 1 (Superseded)	06/07		401/402, 403
513			G.992.3 (2005) Amendment 1 (Superseded)	09/05		401/402, 403
514			G.992.3 (2005) Amendment 2(Superseded)	03/06		401/402, 403
515			G.992.3 (2005) Amendment 3(Superseded)	12/06		401/402, 403
516			G.992.3 (2005) Amendment 4(Superseded)	07/07		401/402, 403
517			G.992.3 (2005) Amendment 5 (Superseded)	06/08		401/402, 403
518	TQD038324	TQD038635	G.992.3 (Superseded)	07/2002		401/402, 403
519			G.992.3 (2002) Amendment 1 (Superseded)	05/03		401/402, 403
520			G.992.3 (2002) Corrigendum 1 (Superseded)	12/03		401/402, 403
521			G.992.3 (2002) Amendment 1 Corrigendum 1 (Superseded)	02/04		401/402, 403
522			G.992.3 (2002) Amendment 2 (Superseded)	04/04		401/402, 403
523			G.992.3 (2002) Amendment 3 (Superseded)	06/04		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
524			G.992.3 (2002) Amendment 4 (Superseded)	06/04		401/402, 403
525			G.992.5 (2009) Corrigendum 1	11/10		401/402, 403
526			G.992.5 (2005) Amendment 1 (Superseded)	07/05		401/402, 403
527			G.992.5 (2005) Amendment 2 (Superseded)	06/06		401/402, 403
528			G.992.5 (2005) Amendment 3 (Superseded)	12/06		401/402, 403
529			G.992.5 (2005) Amendment 4 (Superseded)	07/07		401/402, 403
530			G.992.5 (2005) Amendment 5 (Superseded)	06/08		401/402, 403
531	TQD078348	TQD078439	G.992.5(Superseded)	05/2003		401/402, 403
532			G.992.5 (2003) Corrigendum 1 (Superseded)	04/04		401/402, 403
533			G.992.5 (2003) Amendment 1 (Superseded)	04/04		401/402, 403
534			G.992.5 (2003) Amendment 2 (Superseded)	06/04		401/402, 403
535			G.993.2 (2015) Amendment 1	11/15		401/402, 403
536			G.993.2 (2015) Amendment 2	03/16		401/402, 403
537			G.993.2 (2015) Corrigendum 1	11/16		401/402, 403
538			G.993.2 (2015) Amendment 3	02/18		401/402, 403
539			G.993.2 (2015) Amendment 4	05/18		401/402, 403
540			G.993.2 (2011) Erratum 1 (Superseded)	09/12		401/402, 403
541			G.993.2 (2011) Amendment 1 (Superseded)	04/12		401/402, 403
542			G.993.2 (2011) Corrigendum 1 (Superseded)	06/12		401/402, 403
543			G.993.2 (2011) Amendment 2 (Superseded)	12/12		401/402, 403
544			G.993.2 (2011) Amendment 3 (Superseded)	04/13		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
545			G.993.2 (2011) Amendment 4 (Superseded)	08/13		401/402, 403
546			G.993.2 (2011) Amendment 5 (Superseded)	01/14		401/402, 403
547			G.993.2 (2011) Amendment 6 (Superseded)	05/15		401/402, 403
548	TQD137454	TQD137479	G.993.2 (2006) Corrigendum 1 (Superseded)	12/06		401/402, 403
549	TQD137562	TQD137661	G.993.2 (2006) Amendment 1 (Superseded)	04/07		401/402, 403
550			G.993.2 (2006) Amendment 1 Corrigendum 1 (Superseded)	07/07		401/402, 403
551			G.993.2 (2006) Corrigendum 2 (Superseded)	07/07		401/402, 403
552			G.993.2 (2006) Amendment 2 (Superseded)	02/08		401/402, 403
553	TQD114559	TQD114646	G.993.2 (2006) Amendment 3 (Superseded)	08/08		401/402, 403
554			G.993.2 (2006) Amendment 4 (Superseded)	01/09		401/402, 403
555			G.993.2 (2006) Corrigendum 3 (Superseded)	06/09		401/402, 403
556			G.993.2 (2006) Amendment 5 (Superseded)	04/10		401/402, 403
557			G.993.2 (2006) Amendment 6 (Superseded)	11/10		401/402, 403
558			G.993.2 (2006) Corrigendum 4 (Superseded)	04/11		401/402, 403
559			G.993.2 (2006) Amendment 7 (Superseded)	06/11		401/402, 403
560			G.998.1 (2005) Amendment 1	08/13		401/402, 403
561			G.998.2 (2005) Amendment 1	12/06		
562			G.998.2 (2005) Amendment 2	12/07		
563			G.998.2 (2005) Amendment 3	08/13		

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
564			G.998.2 (2005) Amendment 4	08/15		
565			G.998.2 (2005) Corrigendum 1	03/18		
566	TQD000158	TQD000168	USPN 7,570,686	07/16/03		401/402, 403
567	TQD000212	TQD000220	USPN 7,835,430	06/03/09		401/402, 403
568	TQD000335	TQD000344	USPN 8,238,412	05/13/10		401/402, 403
569	TQD000424	TQD000433	USPN 8,432,956	05/21/12		401/402, 403
570	TQD135370	TQD135372	Development Contract Amendment with Analog Devices Incorporated	06/28/94		401/402, 403
571	QCTQDELTA0072839	QCTQDELTA0072842	[REDACTED]	09/26/95		401/402, 403
572	AWARE000629	AWARE000658	Remote Side G.bis/ADSL2+ License Agreement between Infineon and Aware	06/05/03		401/402, 403
573	AWARE000626	AWARE000628	[REDACTED]	06/27/07		401/402, 403
574	TQD017529	TQD017530	5233NV Data Sheet	No Date		401/402, 403
575	TQD017505	TQD017508	2Wire Intelligent Gateways Data Sheet	05/05		401/402, 403
576	TQD017513	TQD017516	2Wire HomePortal 3000 Series Data Sheet	01/07		401/402, 403
577	TQD017541	TQD017542	HomePortal iNID Data Sheet i3802V	11/07		401/402, 403
578	TQD017509	TQD017512	2Wire HomePortal 2000 Series Data Sheet	01/08		401/402, 403
579			V.90 definition			401/402, 403, 802
580			ITU-T V.90	09/1998		401/402, 403, 802
581			V.34 definition			401/402, 403, 802
582			ITU-T V.34	02/1998		401/402, 403, 802
583			Signal to Noise Ratio, SNR (Radio Electronics.com)			401/402, 403, 802

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
584			Defendant 2Wire, Inc.'s Opening Brief in Support of Its Motion for Judgment on The Pleadings, D.I. 250	12/22/16		401/402, 403
585			Plaintiff's Opposition to Defendant's Motion For Judgment on the Pleadings Under 35 U.S.C. § 101, D.I. 257, including Exhibit 1.	01/18/17		401/402, 403, 802
586			Defendant 2Wire, Inc.'s Reply Brief in Support of Its Motion for Judgment on The Pleadings, D.I. 259	01/27/17		401/402, 403
587			Order Denying Motion for Judgment on the Pleadings (D.I. 249), D.I. 266	02/06/17		401/402, 403
588			IPR Petition filed in IPR2016-01007 re: 8,432,956	05/06/16		401/402, 403
589			Patent Owner's Response filed in IPR2016-01007	02/24/17		401/402, 403
590			Final Written Decision issued in IPR2016-01007	10/27/17		401/402, 403
591			Decision Denying PO Request for Rehearing from IPR2016-01007	03/28/18		401/402, 403
592			2018-1719 Brief of Appellant TQ Delta	08/17/18		401/402, 403
593	TQD001313	TQD001911	USPN 7,570,686 FH	07/16/03		401/402, 403
594	2WIRE00029628	2WIRE00029897	T1.413 Issue 2 (also referred to as T1.413-1998)	06/05/98		401/402, 403
595	2WIRE00034631	2WIRE00034649	USPN 4,679,227 – Hughes-Hartogs	05/20/85		401/402, 403
596	2WIRE00035112	2WIRE00035128	USPN 6,219,378 – Wu	12/19/97		401/402, 403
597	2WIRE00035332	2WIRE00035343	USPN 6,590,893 – Hwang	04/07/99		401/402, 403
598	2WIRE00031692	2WIRE00031697	USPN 6,606,719 - Ryckebusch	03/10/00		401/402, 403
599	2WIRE00029243	2WIRE00029258	US Prov App 60/078,549 - Jacobsen	03/19/98		401/402, 403
600			4111N Data Sheet			401/402, 403
601			Fundamentals of DSL Technology Ch 7			DESC, DUP
602			G.993.2	01/2015		401/402, 403
603			U.S. Pat No 5,822,372 - Emami	08/02/96		401/402, 403
604	TQD040192	TQD040218	U.S. Pat No 6,226,322 - Mukherjee	03/30/98		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
605	TQD059367	TQD059385	U.S. Pat No 6,389,062 – Wu	04/30/98		401/402, 403
606	TQD030814	TQD030827	U.S. Pat No 6,459,678 - Herzberg	12/01/98		401/402, 403
607	TQD030755	TQD030764	U.S. Pat No 6,445,730 – Greszczuk	01/26/99		401/402, 403
608			U.S. Pat No 7,656,649 – Tee	11/04/05		401/402, 403
609			U.S. Pat No 8,290,070 - Guerrieri	05/28/08		401/402, 403
610			U.S. Pat No 9,270,509 - Agon	12/15/14		401/402, 403
611			Pace acquired 2Wire in 2010	07/26/10		401/402, 403
612			Test Report PA51-ZY17-V1B-112918-154730 (5168NV)			401/402, 403, 802, Daub
613			SNRps during Showtime			401/402, 403, 802, Daub
614			Test Report PA50-ZY17-V1B-112118-171930 (5031NV)			401/402, 403, 802, Daub
615			SNRps during Showtime			401/402, 403, 802, Daub
616			List of key words in TQ Delta's patent claims			401/402, 403, 802
617			Value shares of TQ Delta DSL patents and other DSL SEPs			401/402, 403, 802
618			Mr. Eichmann's "value shares" by patent family			401/402, 403, 802
619			Errors in Mr. Eichmann's bottom-up analysis			401/402, 403, 802
620			2Wire damages for Family 1 using alternative sales sources			401/402, 403, 802
621			Expected cost per premise for FTTN vs. FTTP			401/402, 403, 802
622			2Wire's bill of materials for 5268 Gateway product			401/402, 403
623	TQD020960	TQD020969	Email from Cordeiro (Pace) to DelGiorno re: NDA	10/28/13		
624			"LTE Essential IPR." PA Consulting Group.	07/2017		401/402, 403, 802
625			2Wire's Final Invalidity Contentions &	08/15/18		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			Ex A-14			
626	TQD022992	TQD022998	Provisional Application 60/174,865	01/07/00		401/402, 403
627			Dennis J. Rauschmayer, ADSL/VDSL Principles: A Practical and Precise Study of Asymmetric Digital Subscriber Lines and Very High Speed Digital Subscriber Lines' ("Rauschmayer").	1999		401/402, 403, 802
628			Provisional Patent Application No. 60/090,981			401/402, 403
629			Arris International PLC Form 10-K for Fiscal Year ended December 31, 2016, p. 39.	12/31/16		401/402, 403
630			Total Households (TTLHH), Fred Economic Research	No Date		401/402, 403, 802
631			Avanish Dixit, Remarks at the AEA 2011 Nobel Lunch Honoring Elinor Ostrom and Oliver Williamson	01/08/11		401/402, 403, 802
632			Economists' Roundtable on Hot Patent-Related Antitrust Issues, Vol. 27, No. 3	Summer 2013		401/402, 403, 802
633	2WIRE00054588	2WIRE00054589	HomePortal 2700HG Data Sheet, Rev. B	09/05		401/402, 403
634	2WIRE00022261	2WIRE00022262	2Wire, HomePortal 3800HGV-B Intelligent ResidentialGateway Date Sheet	12/06		401/402, 403
635	2WIRE00000590	2WIRE00000671	3800HGV-B Overview	No Date		401/402, 403
636			"Preliminary Amendment," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.,	08/06/12		401/402, 403
637			"Office Action Summary," USPTO U.S. Patent 6,707,882	09/28/12		401/402, 403
638			"Amendment and Response," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.	03/28/13		401/402, 403
639			"Examiner-Initiated Interview Summary," USPTO	05/10/13		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
640			"Notice of Allowability," USPTO	05/13/13		401/402, 403
641			"Notice of Allowance and Fee(s) Due," USPTO	05/21/13		401/402, 403
642			"Substitute Amendment After Allowance Under 37 C.F.R. 1.312," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.,	06/10/13		401/402, 403
643			"Applicant Response to Interview Summary," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.,	06/10/13		401/402, 403
644			"Comment on Statement of Reasons for Allowance," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.	06/10/13		401/402, 403
645			"Part B – Fee(s) Transmittal," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.	06/10/13		401/402, 403
646			"Amendment After Allowance Under 37 C.F.R. 1.312," Letter to the USPTO from Jason Vick of Sheridan Ross P.C.,	06/11/13		401/402, 403
647			"Supplemental Notice of Allowability," USPTO	06/19/13		401/402, 403
648			[REDACTED]	2016		401/402, 403
649			Maurer, Noel, and Stephen Haber, 2018. "An Empirical Analysis of the Patent Troll Hypothesis: Evidence from Publicly-Traded Firms," Hoover Institution Economics Working Paper Series No. 18114: 1-44	10/29/2018		401/402, 403, 802
650			[REDACTED]	01/05/19 (updated)		401/402, 403, 802
651			Plaintiff TQ Delta's Supplemental Identification of Accused Products and Asserted Patents	12/16/16		401/402, 403, 802
652			Second Interim Scheduling Order	12/28/17		401/402, 403

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
653			Benjamin Miller Deposition Transcript	06/18/15		401/402, 403, NE
654			Deposition Transcript of David Krinsky	11/29/17		401/402, 403, NE, 802
655			Deposition Transcript of James Shead	03/21/18		401/402, 403, NE
656			Deposition Transcript of Scott Voegele	03/21/18		401/402, 403, NE
657			Deposition Transcript of Kevin Russell	04/17/18		401/402, 403, NE
658			Deposition Transcript of Mehul Patel	05/31/18		401/402, 403, NE
659			██████████ Deposition Transcript and Exhibits	05/22/18		401/402, 403, NE
660			██████████ Deposition Transcript and Exhibits	05/23/18		401/402, 403, NE
661			Deposition Transcript of Marcos Tzannes	09/10/18		401/402, 403, NE, 802
662			Deposition Transcript of Michael Tzannes	09/10/18		401/402, 403, NE, 802
663			Deposition Transcript of Michael Tzannes	09/11/18		401/402, 403, NE, 802
664			Deposition Transcript of Mark Roche	09/12/18		401/402, 403, NE, 802
665			Abha Divine, Part 1 Deposition Transcript	09/13/18		401/402, 403, NE, 802
666			Abha Divine, Part 2 Deposition Transcript	09/13/18		401/402, 403, NE, 802
667			Abha Divine, Part 3 Deposition Transcript	09/13/18		401/402, 403, NE, 802
668			Ben Miller Deposition Transcript	09/20/18		401/402, 403, NE
669			Richard Eichmann Deposition Transcript	12/19/18		401/402, 403, NE

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
670			Deposition Transcript of Dr. Todor Cooklev	12/19/18		401/402, 403, NE, 802, Daub
671			Deposition Transcript of Arthur T. Brody, Ph.D.	01/09/19		401/402, 403, NE, 802
672			Deposition of Abha Divine	01/09/19		401/402, 403, NE, 802
673			Krista S. Jacobsen Deposition Transcript	01/11/19		401/402, 403, NE, 802
674			Dr. Todor Cooklev Deposition Transcript	01/25/19		401/402, 403, NE, 802, Daub
675			Richard Eichmann Deposition Transcript	01/29/19		401/402, 403, 802, NE
676			Kevin C. Almeroth Deposition Transcript	02/01/19		401/402, 403, NE, 802
677			Krista S. Jacobsen Deposition Transcript	02/05/19		401/402, 403, NE, 802
678			Martin Walker Deposition Transcript	02/06/19		401/402, 403, NE, 802
679			Krista S. Jacobsen, Ph.D. Deposition Transcript	02/06/19		401/402, 403, NE, 802
680			Kevin Almeroth, Ph.D. Deposition Transcript	02/08/19		401/402, 403, NE, 802
681			<i>AVM Techs., LLC v. Intel Corp.</i> , No. CIV.A. 10-610-RGA, 2013 WL 126233 (D. Del. Jan. 4, 2013)			401/402, 403, NE
682			<i>Commonwealth Scientific & Industrial Research Organization v. Cisco Systems, Inc.</i> , 809 F.3d 1295 (Fed. Cir. 2015)			401/402, 403, NE
683			<i>Commonwealth Scientific and Industrial Research Organization v. Cisco Systems</i> , 2015-1066 (Fed. Cir. 2015), slip op. at 11			401/402, 403, NE
684			<i>Cornell University v. Hewlett-Packard Co.</i> , 609 F.Supp.2d 279, 288 (N.D.N.Y.			401/402, 403, NE

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			2009)			
685			<i>Crystal Semiconductor v. Tritech Microelectronics</i> , 246 F.3d 1336 (Fed. Cir. 2001)			401/402, 403, NE
686			<i>Douglas Dynamics, LLC v. Buyers Products Co.</i> , 717 F. 3d 1336, 1346 (Fed. Cir. 2013)			401/402, 403, NE
687			<i>Ericsson, Inc. v. D-Link Systems, Inc.</i> , 773 F.3d 1201 (Fed. Cir. 2014)			401/402, 403, NE
688			<i>ESS Tech., Inc. v. PC-Tel, Inc.</i> , No. C-99-20292, 2001 WL 1891713 (N.D. Cal. Nov. 28, 2001)			401/402, 403, NE
689			<i>Finjan, Inc. v. Secure Computing Corp.</i> , 626 F.3d 1197, 1211 (Fed. Cir. 2010)			401/402, 403, NE
690			<i>Fromson v. Western Litho. Plate & Supply Co.</i> , 853 F.2d 1577			401/402, 403, NE
691			<i>Fujitsu v. Netgear Inc.</i> , 620 F.3d 1321 (Fed. Cir. 2010)			401/402, 403, NE
692			<i>Garretson v. Clark</i> , 111 U.S. 120 (1884)			401/402, 403, NE
693			<i>Georgia-Pacific Corp. v. U.S. Plywood Corp.</i> , 318 F.Supp. 1116 (1970)			401/402, 403, NE
694			<i>GPNE Corp. v. Apple, Inc.</i> , 12-cv-02885-LHK, N.D. Cal., Order (maybe 2014 WL 494247)	04/16/14		401/402, 403, NE
695			<i>Grain Processing Corp. v. American Maize-Products Co.</i> , 185 F.3d 1341 (Fed. Cir. 1999)			401/402, 403, NE
696			<i>Hanson v. Alpine Valley Ski Area, Inc.</i> , 718 F.2d 1075 (Fed. Cir. 1983)			401/402, 403, NE
697			<i>HTC Corporation, et al., v. Telefonaktiebolaget LM Ericsson, et al.</i> , ED Tex., CA No. 6:18-CV-00243-JRG, January 7, 2019, Dkt. 376			401/402, 403, NE

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
698			<i>Impression Products, Inc. v. Lexmark International, Inc.</i> (No. 15-1189, slip op. May 30, 2017)			401/402, 403, NE
699			<i>In re Innovatio IP Ventures, LLC Patent Litig.</i> , 956 F.Supp.2d 925 (September 27, 2013)			401/402, 403, NE
700			<i>In re Innovatio IP Ventures, LLC Patent Litig.</i> , MDL No. 2303, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013)			401/402, 403, NE
701			<i>LaserDynamics, Inc. v. Quanta Computer, Inc.</i> , 694 F.3d 51 (Fed. Cir. 2012)			401/402, 403, NE
702			<i>LG Display Co., Ltd., v. AU Optronics Corp.</i> , 722 F.Supp.2d 466 (D. Del. 2010)			401/402, 403, NE
703			<i>Lucent Techs., Inc. v. Gateway, Inc.</i> , 580 F.3d 1301 (Fed.Cir.2009)			401/402, 403, NE
704			<i>M2M Sols. LLC v. Enfora, Inc.</i> , No. CV 12-32-RGA, 2016 WL 908790, at *8 (D. Del. Mar. 9, 2016), at 19-20			401/402, 403, NE
705			<i>Michael Bowling v. Hasbro, Inc.</i> , 1:05-cv-00229-S-LDA, 2008 WL 717741 (D. RI. March 17, 2008)			401/402, 403, NE
706			<i>Microsoft Corp. v. Motorola, Inc.</i> , 696 F.3d 872 (9th Cir. 2012)			401/402, 403, NE
707			<i>Microsoft Corp. v. Motorola, Inc.</i> , No. C10-1823, 2013 WL 2111217 (W.D. Wash.) April 25, 2013			401/402, 403, NE
708			<i>Microsoft Corp. v. Motorola, Inc.</i> , 795 F.3d 1024, 1053 (9th Cir. 2015)			401/402, 403, NE
709			<i>Monsanto Co. v. McFarling</i> , 488 F.3d 973 (Fed. Cir. 2007)			401/402, 403, NE
710			<i>Nickson Indus., Inc. v. Rol Mfg. Co.</i> , 847 F.2d 795 (Fed. Cir. 1988)			401/402, 403, NE
711			<i>Oracle America, Inc. v. Google, Inc.</i>			401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
						NE
712			<i>Quanta v. LG Electronics</i> , 553 U.S. 617 (2008)			401/402, 403, NE
713			<i>ResQNet.com, Inc. et al. v. Lansa, Inc.</i> , 93 U.S.P.Q.2d 1553, 594 F.3d 860			401/402, 403, NE
714			<i>Rude v. Wescott</i> , 180 U.S. 152, 165, 9 S.Ct. 463, 468, 32 L.Ed. 888 (1889)			401/402, 403, NE
715			<i>Sprint Commc'ns Co. L.P. v. Comcast IP Holdings, LLC</i> , No. CV 12-1013-RGA, 2015 WL 456154, at *2 (D. Del. Jan. 30, 2015)			401/402, 403, NE
716			<i>TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, et al.</i> , 2017 WL 6611635 (C.D. Cal. 2017)			401/402, 403, NE
717			<i>TCL Communication Technology Holdings, Ltd., et al., v. Telefonaktiebolaget LM Ericsson, et al.</i> , (United States District Court, C.D. California. March 9, 2018).			401/402, 403, NE
718			<i>TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson</i> , No. CV 15-2370 JVS(DFMX), 2018 WL 4488286, at *8 (C.D. Cal. Sept. 14, 2018)			401/402, 403, NE
719			<i>TiVo, Inc. v. Echostar Commc'ns Corp.</i> , 516 F.3d 1290, 1308 (Fed. Cir. 2008)			401/402, 403, NE
720			<i>Uniloc USA, Inc. v. Microsoft Corp.</i> , 632 F.3d 1292 (Fed. Cir. 2011)			401/402, 403, NE
721			<i>United States v. AT&T</i>	01/08/82		401/402, 403, NE
722			<i>United States v. Cartwright</i> , 411 U.S. 546 (1973)			401/402, 403, NE
723			<i>Virnetx, Inc. v. Cisco Sys., Inc.</i> , 767 F.3d			401/402, 403,

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)
















PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			1308, 1327 (Fed. Cir. 2014)			NE
724			<i>Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc.</i> , 609 F.3d 1308 (Fed. Cir. 2010)			401/402, 403, NE
725			<i>World Wide Stationery Manufacturing, Co., Ltd. v. Bensons International Systems Inc., et al.</i> , 3:11 CV 523 (2012).			401/402, 403, NE
726			<i>XpertUniverse, Inc. v. Cisco Sys., Inc.</i> , No. CIV.A. 09-157-RGA, 2013 WL 936449 (D. Del. Mar. 11, 2013)			401/402, 403, NE
727			Declaration of Kevin Du	09/28/18		401/402, 403, NE, 802
728			Declaration of Kevin Du	01/28/19		401/402, 403, NE, 802
729			Ari B. Lukoff Declaration with Exhibits A-B	02/26/19		401/402, 403, NE, 802
730	2WIRE00031967	2WIRE00031967	Excel			401/402, 403
731			VDSL: The Next Step in the DSL Progression	08/99		401/402, 403, 802
732	TQD 116864	TQD 116864	Temporary Document FC-060 - Title: G.admin Proposal to start G.bond: Multi-pair (Bonded) ADSL	12/10/01		401/402, 403, 802
						
						
						
PHYSICALS						
			5168N			
			5168NV			
			5268AC			

Exhibit 6 - TQ Delta's Trial Exhibits – Family 2 (April 29, 2019)

PTX No.	Beg Bates#	End Bates#	Document Description	Document Date	Deposition Exhibit	Objections
			I3812v			

EXHIBIT 7


TQ DELTA, LLC, v. 2WIRE, INC.,
C.A. No. 13-cv-1835-RGA

Code	Ground
401/402	Not relevant. Fed. R. Evid. 401, 402
403	Unduly prejudicial, confusing, wasteful, or cumulative. Fed. R. Evid. 403
701	Improper lay opinion. Fed. R. Evid. 701
702	Improper expert testimony. Fed. R. Evid. 702, 703
802	Hearsay if offered for the truth of the matter asserted. Fed. R. Evid. 802
901	Requires authenticity or identification. Fed. R. Evid. 901
1002	Violates best evidence rule. Fed. R. Evid. 1002
1006	Improper summary. Fed. R. Evid. 1006
CC	Related to claim construction
D	Duplicate
Daub	Subject to exclusion pending Daubert Motion
DESC	Inadequate, misleading, or improper description
F	Lacks foundation/lacks personal knowledge/speculation. Fed. R. Evid. 104, 602, 1003, 1005
FL	Foreign language document
ILL	Illegible
UT	Untimely disclosed/not produced in discovery
MIL	Subject to pending MIL issue
SAN	Subject to pending motion for sanctions
M	Mismatch (marked exhibit and exhibit list description do not match)
NE	Not Evidence
NS	Exhibit not stamped with trial exhibit number
OS	Outside Scope of Rule 30(b)(6) Topic
SJ	Subject to exclusion pending Motion for Summary Judgment

2Wire, Inc.'s Family 2 Trial Exhibit List

This exhibit list is based on the current status of the case, the Court's April 1, 2019 Order indicating that the Court does not "intend to try any FRAND, contract, damages, and equitable issues until after I have determined which patents asserted against 2Wire are valid and infringed," D.I. 1043, and the Court's April 10, 2019 Memorandum Opinion and Order, D.I. 1058, 1059. 2Wire reserves the right to modify or supplement this exhibit list in light of further decisions or orders from this Court, any of TQ Delta's pretrial statements, and to the extent any amendments or other alterations arise impacting the facts or issues for trial.

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
1	11/17/2014	TQ Delta, LLC's Responses to the Defendants' First Set of Joint Interrogatories				
2	11/17/2014	TQ Delta, LLC's Responses to 2Wire, Inc.'s First Set of Interrogatories to TQ Delta, LLC				
3	11/10/2015	TQ Delta, LLC's Supplemental Responses to the Defendants' Joint Interrogatories Nos. 1, 2, 5, and 6				
4	11/25/2015	TQ Delta, LLC's Second Supplemental Response to the Defendants' Joint Interrogatory No. 2				
5	9/29/2017	TQ Delta, LLC's Second Supplemental Response to the Defendants' Joint Interrogatory No. 1 and Supplemental Response to Joint Interrogatory No. 3				
6	11/15/2017	TQ Delta, LLC's Responses to 2Wire's Second Set of Individual Interrogatories				
7	11/17/2017	Plaintiff TQ Delta, LLC's Responses to Defendants' Second Set of Joint Interrogatories Nos. 7-14			Marcos Tzannes Ex. 15	
8	3/7/2018	TQ Delta, LLC's Responses to 2Wire, Inc.'s Third Set of Interrogatories to TQ Delta, LLC (Nos. 14-20)				
9	4/20/2018	TQ Delta, LLC's Supplemental Response to 2Wire, Inc.'s Interrogatory No. 16 to TQ Delta, LLC				
10	6/8/2018	TQ Delta, LLC's Supplemental Responses to 2Wire's Individual Interrogatories Nos. 9 and 12				

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
11	6/8/2018	TQ Delta, LLC's Supplemental Responses to the Defendants' Joint Interrogatories Nos. 4, 8, and 12			Marcos Tzannes Ex. 16	
12	7/17/2018	TQ Delta, LLC's Third Supplemental Response to the Defendants' Joint Interrogatory No. 2			Divine Ex. 29 Vick Ex. 21	
13	7/25/2018	TQ Delta, LLC's First Supplemental Response to 2Wire, Inc.'s Interrogatory No. 14			Marcos Tzannes Ex. 23	
14	7/25/2018	TQ Delta, LLC's First Supplemental Response to the Defendants' Joint Interrogatory No. 13				
15	11/17/2014	TQ Delta, LLC's Responses to the Defendants' First Set of Joint Requests for Admission				
16	3/7/2018	TQ Delta, LLC's Responses to the Defendant 2Wire, Inc.'s First Set of Individual Requests for Admission (Nos. 1-20)				
17	3/8/2018	TQ Delta, LLC's Corrected and Supplemental Responses to Defendant 2Wire, Inc.'s First Set of Individual Requests for Admission (Nos. 1-20)				
18	6/8/2018	TQ Delta, LLC's First Supplemental Responses to Defendant 2Wire, Inc.'s Individual Requests for Admission (Nos. 16-20)				
19	1/2/2019	Subpoena to Testify at a Deposition in a Civil Action to Dr. Kevin C. Almeroth			Almeroth Ex. 1	Incomplete (lacks objections and agreed scope)
20	9/7/2017				Almeroth Ex. 3 Walker Ex. 4	Incomplete (lacks objections and agreed scope)

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Objections
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

[REDACTED]

[REDACTED]

DTX No.	Date	[REDACTED]	[REDACTED]	[REDACTED]	Deposition Ex.	Objections
		[REDACTED]	[REDACTED]	[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]_000010	Almeroth Ex. 16	
[REDACTED]	[REDACTED]	[REDACTED]			Bernstein Ex. 2 Divine Ex. 2	401/402, 403
[REDACTED]	[REDACTED]	[REDACTED]			Bernstein Ex. 3	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED] 362	Reiter Ex. 532 Bernstein Ex. 5 Russell Ex. 603 Marcos Tzannes Ex. 17 Michael Tzannes Ex. 7 Vick Ex. 12 Almeroth F2 Ex. 2 Cahill Ex. 514 Plaintiff's Exhibit 122 Walker Ex. 7	
[REDACTED]	[REDACTED]	[REDACTED]			Cooklev Ex. 2	
[REDACTED]	[REDACTED]	[REDACTED]			Cooklev Ex. 3	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED] 386	Divine Ex. 1	MIL, 401/402, 403
[REDACTED]	[REDACTED]	[REDACTED]			Divine Ex. 3	MIL, 401/402, 403

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
39	7/15/2018	Letter From Matthew DelGiorno to Sean McGhie Re: DSL Patent Portfolio Licensing	TQD021303	TQD021318	Divine Ex. 4 Plaintiff's Ex. 36	
40	8/6/2013	Letter From Matthew DelGiorno to Sean McGhie Re: DSL Patent Portfolio Licensing	TQD021319	TQD021321	Divine Ex. 5 Plaintiff's Ex. 37	
41	8/23/2013	Email from Matthew DelGiorno to Sean McGhie Re: TQ Delta / Pace / Patent licensing discussions	TQD021248	TQD021267	Divine Ex. 6 Plaintiff's Ex. 38	
42	9/4/2013	Email from Matthew DelGiorno to David Cordeiro Re: TQ Delta / Pace - phone call	TQD021146	TQD21150	Divine Ex. 7	
43	10/28/2013	Email from David Cordeiro to Matthew DelGiorno Re: TQ Delta / Pace - phone call	TQD020960	TQD020969	Divine Ex. 8	
44	10/28/2013	Email from Matthew DelGiorno to David Cordeiro Re: TQ Delta / Pace - phone call	TQD021157	TQD021166	Divine Ex. 9	
45	10/31/2013	Email from Matthew DelGiorno to David Cordeiro Re: TQ Delta / Pace - phone call	TQD021189	TQD021200	Divine Ex. 10	
46	10/31/2013	Email from Matthew DelGiorno to David Cordeiro Re: TQ Delta / Pace - phone call	TQD021201	TQD021212	Divine Ex. 11	
47	11/1/2013	Email from David Cordeiro to Matthew DelGiorno Re: TQ Delta / Pace - phone call	TQD021025	TQD021033	Divine Ex. 12	
48	11/1/2013	Email from David Cordeiro to Matthew DelGiorno Re: Pace	TQD020890	TQD020894	Divine Ex. 13	
49	11/1/2013	Email from Matthew DelGiorno to David Cordeiro Re: Pace	TQD021127	TQD021138	Divine Ex. 14	
50	11/4/2013	Email from Matthew DelGiorno to David Cordeiro Re: Pace	TQD021068	TQD021070	Divine Ex. 15	
51	11/5/2013	Email from Matthew DelGiorno to David Cordeiro Re:	TQD021270	TQD021302	Divine Ex. 16	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
		TQ Delta v. Pace / Patent infringement suit				
52	12/16/2013	Confidentiality & FRE 408 Agreement Between TQ Delta, LLC and Pace Americas, Inc.	TQD021322	TQD021324	Divine Ex. 17	
53	2/29/2012	Email from C. Graham Gerst to Mark Roche, Nabha Rege et al. Re: DSL slides	TQD134983	TQD135054	Divine Ex. 22 Roche Ex. 17	401/402, 403
54		Aware, Inc. DSL Patent Portfolio Opportunity	TQD136263 TQD137408	TQD136277 TQD137408	Divine Ex. 23 Marcos Tzannes Ex. 10	
55	06/1999	ITU-T G992.1 - Asymmetric digital subscriber line (ADSL) transceivers	TQD043009	TQD043264	Plaintiff's Jacobsen Ex. 10	SJ
56	5/27/2015	Plaintiff TQ Delta, LLC's First Rule 30(b)(6) Deposition Notice			Plaintiff's Ex. 1	
57	11/11/2009	2Wire ADSL Requirements Specification, Section 4	2WIRE00001896	2WIRE00001928	Plaintiff's Ex. 2	
58	10/20/2009	2Wire ADSL Requirements Specification	2WIRE00001955	2WIRE00001969	Plaintiff's Ex. 3	
59	5/15/2009	2Wire 503x VDSL Product Family Product Requirements Document	2WIRE00004628	2WIRE00004673	Plaintiff's Ex. 5	
60	04/2010	2Wire i3812V Data Sheet	TQD-2WIRE 000694	TQD-2WIRE 000697	Plaintiff's Ex. 20	
61		Pace 5168NV Data Sheet	2WIRE00001577	2WIRE00001578	Plaintiff's Ex. 25	
62	01/2005	ITU-T G.998.2 - Ethernet-based multi-pair bonding	TQD115442	TQD115459	Almeroth F2 Ex. 7 Plaintiff's Ex. 96 Marcos Tzannes Ex. 40 Putnam F2 Ex. 25	
63	9/7/2004	IEEE 802.3ah-2004 - Part 3: Carrier Sense Multiple Access With Collision Detection (CSMA/CD) Access	TQD112245	TQD112884	Plaintiff's Ex. 97	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
		Method and Physical Layer Specifications - Amendment: Media Access Control Parameters, Physical Layers, and Management Parameters for Subscriber Access Networks				
64	7/13/2012	Pace Customer Hardware Requirement AT&T 5168NV, Version 1.5	2WIRE00042024	2WIRE00042043	Plaintiff's Ex. 98	
65	1/24/2014	██████ Data Sheet - High-Performance Multimedia Multimode ADSL2+/VDSL2 Gateway	2WIRE00004082	2WIRE00004603	Plaintiff's Ex. 99	
66		██████	2WIRE00005009	2WIRE00005009	Plaintiff's Ex. 100	
67	9/12/2018	Print-out of ██████ g to Pace 5168NV	2WIRE00005009	2WIRE00005009	Plaintiff's Ex. 101	
68	7/1/2008	Gateway Product Requirement Document iNIDv2, Version 2.2	2WIRE00004805	2WIRE00004822	Plaintiff's Ex. 107	
69	9/12/2018	Print-out of ██████ Pertaining to Pace i3812V (INID Outside Unit)	2WIRE00005009	2WIRE00005009	Plaintiff's Ex. 109	
70		██████	2WIRE00022998	2WIRE00022998	Plaintiff's Ex. 110	
71	10/28/2008	U.S. Patent No. 7,443,916	TQD-2WIRE 001310	TQD-2WIRE 001324	Plaintiff's Ex. 112	401/402, 403
72	10/18/2004	ITU SI-045 - VDSL2: Proposal for Impulse Noise Mitigation Scheme for VDSL2	TQD-2WIRE 001255	TQD-2WIRE 001256	Plaintiff's Ex. 113	
73	7/29/2005	2Wire, Inc. Patent Statement and Licensing Declaration for G993.2 VDSL2 Recommendation	2WIRE00051785	2WIRE00051786	Plaintiff's Ex. 114	401/402, 403
74	10/17/2016	Arris PowerPoint Presentation Entitled "Telco & Satellite CPE Operations Review"	2WIRE00041539	2WIRE00041632	Plaintiff's Exhibit 89	401/402, 403
75		PowerPoint Entitled "2Wire Management Presentation"	2WIRE00051255	2WIRE00051337	Plaintiff's Exhibit 90	401/402, 403

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
76	2/2/2006	Aware, Inc. Hercules API	PIZ000192	PIZ000261	Pizzano Ex. 547	401/402, 403
77	12/3/2002	Aware, Inc. SHDSL Reference Design - DCE Software Engineering Specification	PIZ000265	PIZ000303	Pizzano Ex. 548	401/402, 403
78		Proposed Schedule, 930 Development and Proposed Schedule , DCE	PIZ000370	PIZ000370	Pizzano Ex. 549	401/402, 403
79		Exhibit A3: Third Statement of Work for Dr. DSL Assembly ADSL2 Software Upgrade; Exhibit B3: NRE Fees and License Fees; Exhibit C3 Royalties	PIZ000365	PIZ000369	Pizzano Ex. 550	
80	1/29/2018	Notice of Revised Subpoena to Third Party Edmund Reiter			Reiter Ex. 528	Incomplete (lacks objections and agreed scope)
81		Edmund Reiter's LinkedIn Profile			Reiter Ex. 529	
82	12/5/2016	Email From Michael Tzannes to Peter Heller, Michael Lund et al. Re: 2016 Redbones Holiday Lunch - please save the date			Reiter Ex. 530	401/402, 403
83	10/5/2001	New Provisional Application Transmittal Letter For Patent Application No. 60/327440	TQD023548	TQD023561	Reiter Ex. 531 Marcos Tzannes Ex. 32 Vick Ex. 13 Cahill Ex. 516	401/402, 403
84	10/4/2002	New Provisional Application Transmittal Letter For Patent Application No. 10/264258	TQD000897	TQD000939	Reiter Ex. 533	401/402, 403
85	6/2/2005	Aware Press Release Entitled "Aware Showcases Its StratiPHY Family of DSL Solutions at Supercomm 2005"			Reiter Ex. 534	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
86	7/18/2015	Aware Press Release Entitled "Aware Announces Adoption of its Stratiphy-Bonded ADSL2+ Technology"			Reiter Ex. 535	
87	10/1/2007	License Agreement Between Infineon Technologies AG and Aware Inc.	AWARE001293	AWARE001342	Reiter Ex. 536 Russell Ex. 619	
88	8/22/2012	Patent Purchase Agreement Between Aware, Inc. and TQ Delta, LLC	AWARE001791	AWARE001861	Russell Ex. 606 Michael Tzannes Ex. 4	
89	1/8/2018	Notice of 30(b)(6) Deposition to TQ Delta			Roche Ex. 1 Marcos Tzannes Ex. 2	Incomplete (lacks objections and agreed scope)
90		Mark Roche's LinkedIn Profile			Roche Ex. 2	
91	8/21/2012	Limited Liability Company Agreement of TQ Delta LLC	TQD-ADT 025266	TQD-ADT 025267	Roche Ex. 3	401/402, 403, 802, MIL
92	9/7/2012	Amended and Restated Limited Liability Company Agreement of TQ Delta, LLC	TQD-ADT 131557	TQD-ADT 131580	Roche Ex. 4	401/402, 403, 802, MIL
93	12/15/2016	Second Amended and Restated Limited Liability Company Agreement of TQ Delta LLC	TQD-ADT 137296	TQD-ADT 137953	Roche Ex. 5	401/402, 403, 802, MIL
94		TechQuity DSL/MoCA Standard Essential Assets Investment	TQD-ADT 131581	TQD-ADT 131582	Roche Ex. 6	401/402, 403, 802, MIL
95	8/22/2012	Patent Purchase Agreement Between Aware, Inc. and TQ Delta, LLC	TQD-ADT 023862	TQD-ADT 023932	Roche Ex. 7	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
96	8/22/2012	Email From Elizabeth Koehn to Mark Roche, cc Graham Gerst Re: minor tweak.. done?	TQD-ADT 136335	TQD-ADT 136337	Roche Ex. 8	401/402, 403
97	7/12/2012	Email From C. Graham Gerst to Mark Roche Re: Aware draft sales agreement	TQD-ADT 135612	TQD-ADT 135612	Roche Ex.9	401/402, 403, 802
98		PowerPoint Entitled "DSL Patent Portfolio"	TQD-ADT 136131	TQD-ADT 136201	Roche Ex. 10 Marcos Tzannes Ex. 37	401/402, 403, 802
99	5/3/2012	Email From C. Graham Gerst to Mark Roche Re: Aware DSL portfolio	TQD-ADT 136103	TQD-ADT 136104	Roche Ex. 11 Michael Tzannes Ex. 15	401/402, 403, 802
100		PowerPoint Entitled "DSL Portfolio Update"	TQD-ADT 136105	TQD-ADT 136125	Roche Ex. 12 Michael Tzannes Ex. 16	401/402, 403, 802
101		Aware, Inc. DSL Patent Portfolio Opportunity	TQD-ADT 137460	TQD-ADT 137478	Roche Ex. 13	
102	10/21/2011	Email From C. Graham Gerst to Mark Roche Re: Materials we discussed	TQD135062	TQD135077	Roche Ex. 14	401/402, 403, 802
103	1/31/2012	Email From C. Graham Gerst to Nabha Rege and Mark Roche Re: Aware Sales Process	TQD135058	TQD135061	Roche Ex. 15	401/402, 403, 802
104	2/14/2012	Email From C. Graham Gerst to Mark Roche and Nabha Rege Re: Update concerning the Aware patent portfolios	TQD135055	TQD135057	Roche Ex. 16	401/402, 403, 802
105	5/3/2012	Email From C. Graham Gerst to Mark Roche Re: Aware DSL portfolio	TQD134956	TQD134978	Roche Ex. 18	401/402, 403, 802
106	7/24/2012	Email From Elizabeth Koehn to Mark Roche Re: DSL Portfolio	TQD135362	TQD135378	Roche Ex. 19	401/402, 403, 802
107		List of DSL Claim Charts Prepared by Global IP Law	TQD-ADT 137954	TQD-ADT 137974	Roche Ex. 20	401/402,

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
		Group, LLC				403, 802
108	9/20/2012	Assignment of Patent Rights From Aware, Inc. to TQ Delta, LLC	TQD000072	TQD000096	Roche Ex. 21	
109		TQ Delta, LLC PowerPoint Presentation Subject to NDA Between Direct Lending Investments, LLC and Techquity Capital Management Dated 1/17/18	TQD 138984	TQD 138996	Roche Ex. 27 Roche Ex. 24	401/402, 403 MIL
110		PowerPoint Presentation Entitled "TQ Delta, LLC Patent Portfolio Overview"	TQD 139029	TQD 139061	Roche Ex. 25	401/402, 403 MIL
111	10/5/2018	Intellectual Property Security Agreement Between TQ Delta, LLC, TQCAP GP, LLC, Techquity Capital Management, LLC and DLI Lending Agent, LLC			Roche Ex. 26	401/402, 403 MIL
112	10/4/2018	Third Amended and Restated Limited Liability Company Agreement of TQ Delta LLC	TQD-ADT 139909	TQD-ADT 139940	Roche Ex. 28	401/402, 403, MIL
113	3/29/2018	Subpoena to Testify at a Deposition in a Civil Action to Aware, Inc. c/o Kevin Russell			Russell Ex. 600	
114	4/3/2018	Kevin Russell's LinkedIn Profile			Russell Ex. 601	
115	8/28/1998	Frame Agreement Between Siemens and Aware, Inc.	AWARE000965	AWARE000980	Russell Ex. 615	
116	8/28/1998	License Agreement Between Siemens and Aware, Inc.	AWARE000981	AWARE001001	Russell Ex. 616	
117	6/5/2003	Remote Side G.bis/ADSL2+ License Agreement Between Aware Inc. and Infineon Technologies	AWARE000629	AWARE000658	Russell Ex. 617	
118	4/30/2004	[REDACTED]	AWARE000783	AWARE000807	Russell Ex. 618	
119	10/14/2009	[REDACTED]	AWARE001658	AWARE001790	Russell Ex. 620	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
120	11/12/2009	Letter From Dr. Hoyst Meyer (Infineon Technologies AG) to Mario Finocchiaro (Aware Inc.) Re: Assignment of Contracts Relating to Infineon's Wireline Communications Business to Lantiq	AWARE001394	AWARE001428	Russell Ex. 621	
121	10/1/2015 et al.	Compilation of Letters Regarding Royalty Payments Made by Infineon Technologies AG to Aware, Inc.	AWARE001574 et al.	AWARE001575 et al.	Russell Ex. 622	401/402, 403
122	2/3/10 et al.	Compilation of Letters Regarding Royalty Payments Made by Lantiq to Aware, Inc.	AWARE001475 et al.	AWARE001483 et al.	Russell Ex. 623	401/402, 403
123	3/22/2000	Development and License Agreement Between Aware, Inc. and SigmaTel, Inc.	AWARE000018	AWARE000035	Russell Ex. 624	
124	10/24/2001	Amendment No. 1 to Development and License Agreement Between Aware, Inc. and Metanoia Technologies, Inc.	AWARE000011	AWARE000017	Russell Ex. 625	
125	5/9/2012	Letter From Kevin Russell to H. Spence Jackson Re: Development and License Agreement Between Metanoia Technologies, Inc. and Aware, Inc.	AWARE000002	AWARE000002	Russell Ex. 626	
126	4/23/1999	Development and License Agreement Between Aware, Inc. and NEC Corporation	AWARE001908	AWARE001931	Russell Ex. 627	
127	9/29/2000	Amendment No. 1 to Development and License Agreement Between Aware, Inc. and NEC Corporation	AWARE001900	AWARE001907	Russell Ex. 628	
128	9/25/1993	License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE002071	AWARE002083	Russell Ex. 629	
129	9/25/1993	Development Contract Between Aware, Inc. and Analog Devices, Inc.	AWARE002084	AWARE002092	Russell Ex. 630	
130	3/20/1998	Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE002041	AWARE002070	Russell Ex. 631	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
131	12/10/2003	Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE002009	AWARE002021	Russell Ex. 632	
132	9/30/2004	Amendment "A" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001997	AWARE002008	Russell Ex. 633	
133	12/30/2005	Agreement Between Aware, Inc. and Analog Devices, Inc. Regarding Assignment of Agreements to Ikanos Communications, Inc.	AWARE001994	AWARE001996	Russell Ex. 634	
134	3/25/2010	Assignment Agreement Between Aware, Inc. and Ikanos Communications, Inc.	AWARE001990	AWARE001993	Russell Ex. 635	
135	9/14/1999	Master Development and License Agreement Between Intel Corporation and Aware, Inc.	AWARE002193	AWARE002246	Russell Ex. 636	401/402, 403
136	5/15/2001	Second Amendment to the Master Development and License Agreement Between Intel Corporation and Aware, Inc.	AWARE002097	AWARE002102	Russell Ex. 637	401/402, 403
137	12/1/2005	Development and License Agreement Between Aware, Inc. and Centillium Communications, Inc.			Russell Ex. 638	401/402, 403
138	02/2006	ITU-T G.993.2 - Very high speed digital subscriber line transceivers 2 (VDSL2)	TQD078668	TQD078919	Plaintiff's Ex. 57	
139	1/16/2008	Notice of Subpoenas for Marcos Tzannes			Marcos Tzannes Ex. 1	Incomplete (lacks objections and agreed scope)
140		Marcos Tzannes Curriculum Vitae	TQD 115682	TQD 115682	Marcos Tzannes Ex. 3	
141		Marcos Tzannes LinkedIn Profile			Marcos Tzannes Ex. 4	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
142	11/19/2012	Email From Mark Roche to Marcos Tzannes, cc Michael Tzannes Re: NDA	TQD131275	TQD131280	Marcos Tzannes Ex. 5	401/402, 403, 802
143	7/15/2013	Common Interest/Confidentiality Agreement Between TQ Delta, LLC and Michael Tzannes, Marcos Tzannes, and Tzannes Patent Management, LLC	TQD 115692	TQD 115694	Marcos Tzannes Ex. 6	401/402, 403
144	12/14/2012	Consulting Services Agreement Between TQ Delta, LLC and Tzannes Patent Management, LLC	TQD 115695	TQD 115703	Marcos Tzannes Ex. 7 Michael Tzannes Ex. 3	401/402, 403
145	8/15/2018	Consulting Services Agreement Between TQ Delta, LLC and Tzannes Patent Management, LLC	TQD136282	TQD136291	Marcos Tzannes Ex. 8 Michael Tzannes Ex. 5	401/402, 403
146	11/9/2012	Email From Marcos Tzannes to Mark Roche and Michael Tzannes Re: Call to discuss structure	TQD131289	TQD131289	Marcos Tzannes Ex. 9	401/402, 403
147		Spreadsheet Print-outs From Global IP Law Group Regarding DSL Sales Data	TQD136278	TQD136278	Marcos Tzannes Ex. 11	
148		Spreadsheet Print-outs From Tabs Titled "NA and Row Service Providers" and "EU Service Providers" With Revenue, Subscriber, and Sales Information	TQD136279	TQD136279	Marcos Tzannes Ex. 12	
149		Aware, Inc.'s Explanation of Financial Information to Interested Buyers	TQD136280	TQD136281	Marcos Tzannes Ex. 13	
150	12/10/2001	ITU-T FC-060 - G.admin: Proposal to start G.bond: Multi-pair (Bonded) ADSL	TQD 116864	TQD 116864	Marcos Tzannes Ex. 31 Vick Ex. 14	
151	3/8/2004	ITU-T MC-123R2 - G.bond, G.hs: Proposed codepoint for max delay variation in ATM-based bonding			Marcos Tzannes Ex. 33	
152	4/24/2001	U.S. Patent No. 6,222,858 - Counterman	ADTRAN_00055190	ADTRAN00055206	Marcos Tzannes Ex. 38	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
153	01/2005	ITU-T G.998.1 - ATM-based multi-pair bonding	ADTRAN_00073740	ADTRAN_00073775	Marcos Tzannes Ex. 39	
154	10/5/2010	U.S. Patent No. 7,809,028 - Tzannes	TQD000184	TQD000199	Marcos Tzannes Ex. 45 Plaintiff's Exhibit 125	
155	1/16/2018	Notice of Subpoenas for Michael Tzannes			Michael Tzannes Ex. 1	Incomplete (lacks objections and agreed scope)
156		Michael Andrew Tzannes Curriculum Vitae	TQD130636	TQD130641	Michael Tzannes Ex. 2	
157	12/14/2012	First Amendment to the Consulting Services Agreement Between TQ Delta, LLC and Tzannes Patent Management, LLC	TQD037138	TQD037143	Michael Tzannes Ex. 10	401/402, 403
158	12/21/2017	Second Amendment to the Consulting Services Agreement Between TQ Delta, LLC and Tzannes Patent Management, LLC	TQD123043	TQD123045	Michael Tzannes Ex. 11	401/402, 403
159	5/13/2013	Tzannes Patent Management, LLC Invoice to TQ Delta, LLC Re: Patent Prosecution Support for DSL/MoCA Patent Portfolio	TQD 138677	TQD 138683	Michael Tzannes Ex. 24	
160	6/10/2016	Tzannes Patent Management, LLC Invoice to TQ Delta, LLC Re: Patent Prosecution Support for DSL/MoCA Patent Portfolio	TQD 138929	TQD 138935	Michael Tzannes Ex. 25	
161	1/3/2017	Tzannes Patent Management, LLC Invoice to TQ Delta, LLC Re: Patent Prosecution, Litigation and Licensing Support for DSL/MoCA Patent Portfolio	TQD 138944	TQD 138945	Michael Tzannes Ex. 26	
162		Jason Vick's LinkedIn Profile			Vick Ex. 1	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
163	12/6/2018	Jason Vick's Sheridan Ross PC Website Profile			Vick Ex. 2	
164	10/27/2017	Notice of Subpoena for Jason H. Vick			Vick Ex. 3	Incomplete (lacks objections and agreed scope)
165	03/1999	ITU-T COM 15-133-E Draft New Recommendation G.996.1: Test Procedures For Digital Subscriber Line (DSL) Transceivers - For Approval	VICK_0001	VICK_0002	Vick Ex. 4	
166	11/16/2018	Privilege Log for Withheld Documents Pertaining to Jason Vick			Vick Ex. 5	401/402, 403
167	10/12/2001	Letter From Kevin Russell to the Director of the Telecommunication Standardization Bureau Attaching Patent Statement and Licensing Declarations From Aware, Inc. for ITU-T Recommendations 1) G.dmt.bis and 2) G.lite.bis	AWARE000269	AWARE000273	Vick Ex. 10	401/402, 403
168	7/17/2013	TQ Delta, LLC Patent Statement and Licensing Declaration Regarding Amendment 1 to Recommendation ITU-T G.998.1 (2005)	TQD126753	TQD126755	Vick Ex. 15	
169	11/29/2004	Aware, Inc. Patent Statement and Licensing Declaration Regarding G.bond-ATM	TQD020675	TQD020676	Vick Ex. 16	
170		Pace PowerPoint Slides Discussing 2013 and 2014 Products and Product Features	2WIRE00038743	2WIRE00038747	Plaintiff's Ex. 11	
171		Pace 5268AC Data Sheet	2WIRE00037840	2WIRE00037842	Plaintiff's Ex. 12	
172		2Wire HomePortal INID Outdoor Residential Gateway Data Sheet	2WIRE00001617	2WIRE00001618	Plaintiff's Ex. 18	
173		2Wire HomePortal INID Outdoor Residential Gateway Data Sheet	2WIRE00001204	2WIRE00001207	Plaintiff's Ex. 19	

DTX No.	Date	Description	Beg Bates	es	Deposition Ex.	Objections
174		Pace 5168N Data Sheet	2WIRE000015	0001576	Plaintiff's Ex. 24	
175	9/20/2013	Pace 5268AC Proposal for AT&T - Submitted by Brad Richardson	2WIRE000363	0036407	Plaintiff's Ex. 26	
176		Pace PowerPoint Presentation Entitled "Advisory Board Meeting 2014 Boca Raton, FL"	2WIRE000464	0046537	Plaintiff's Ex. 29	
177		Arris PowerPoint Presentation Entitled "Americas Telco Gateways 2016 WWSM Conference"	2WIRE000417	0041746	Plaintiff's Ex. 30	
178	5/4/2018	[REDACTED] to [REDACTED]			Yu Ex. 1	Incomplete (lacks objections and agreed scope)
179	5/4/2018	Subpoena to Testify at a Deposition in a Civil Action to Gong San-Yu			Yu Ex. 2	Incomplete (lacks objections and agreed scope)
180		[REDACTED]			Yu Ex. 3	
181	2/9/2018	[REDACTED]			Yu Ex. 4	401/402, 403
182		[REDACTED]	[REDACTED]	[REDACTED]	Yu Ex. 5	
183		[REDACTED]	[REDACTED]	[REDACTED] C [REDACTED] 1	Yu Ex. 6	
184		[REDACTED] " [REDACTED] N [REDACTED]			Yu Ex. 7	

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Objections
[REDACTED]		[REDACTED]			[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

[REDACTED]

[REDACTED]

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
221	10/1/2007	License Agreement Between Infineon Technologies AG and Aware Inc.	AWARE000861	AWARE000904		
222	9/16/2008	Amendment No. 3 to License Agreement Between Aware, Inc. and Infineon Technologies AG Dated October 1, 2007	AWARE001348	AWARE001361		
223	12/17/2008	Amendment No. 5 to License Agreement Between Aware, Inc. and Infineon Technologies AG Dated October 1, 2007	AWARE000936	AWARE000943		
224	9/26/1995	Second Amendment to Development Contract Between Aware and Analog Devices	TQD135373	TQD135375		
225	9/26/1995	Appendix 2 to License Agreement Between Aware and Analog Devices, Inc. Dated September 1993 and Effective as of This 26th Day of September 1995	TQD135364	TQD135367		
226	6/22/2005	Amendment No. 5 to Remote Side G.Bis/ADSL2+License Agreement Between Aware, Inc. and Infineon Technologies AG Dated June 5, 2003	AWARE000683	AWARE000697		
227	10/14/2005	Amendment No. 6 to Remote Side G.Bis/ADSL2+License Agreement Between Aware, Inc. and Infineon Technologies AG Dated June 5, 2003	AWARE000698	AWARE000705		
228	3/31/2008	Amendment No. 1 to License Agreement Between Aware, Inc. and Infineon Technologies AG Dated October 1, 2007	AWARE000905	AWARE000910		
229	6/30/2008	Amendment No. 2 to License Agreement Between Aware, Inc. and Infineon Technologies AG Dated October 1, 2007	AWARE000911	AWARE000915		
230	6/17/2002	ITU-T - BB-U07 - G.bond: Updated "Issues List" for G.bond	2WIRE00052482	2WIRE00052484		
231	3/8/2014	ITU-T - MC-U07R1 - G.bond Issues List	2WIRE00052491	2WIRE00052499		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
232	06/1999	ITU-T G.992.2 - Splitterless Asymmetric Digital Subscriber Line (ADSL) Transceivers	2WIRE00052246	2WIRE00052424		401/402, 403, 802, F
233	9/30/2014	[REDACTED]	2WIRE00054866	2WIRE00054866		401/402, 403, 802, DAUB, UT
234	7/22/2013	Document Entitled "UNH-IOL DSL Consortium Broadband Forum TR-114i2 Report" Revision 1.0	2WIRE00049169	2WIRE00049186		401/402, 403, 802, DESC
235	12/6/2013	Email From Matt DelGiorno to Dave Cordeiro Re: Pace/TQD	TQD21074	TQD021079		No obj. assuming other post-suit negotiation are not objected to, otherwise incomplete
236		Aware, Inc. Patent Statement and Licensing Declaration for G992.3-02 G.dmt.bis	TQD020684	TQD020684		
237		2Wire iNID and iPSU Installation Guide i3812V	2WIRE00001407	2WIRE00001454		
238		Pace User Guide HomePortal Intelligent Gateway 5168	2WIRE00001579	2WIRE00001610		
239		2Wire iNID User Guide i3812V	2WIRE00001619	2WIRE00001750		
240		Native Spreadsheet With Testing Data	2WIRE00004889	2WIRE00004889		
241		Native Spreadsheet With Testing Data	2WIRE00004890	2WIRE00004890		
242		Native Spreadsheet With Testing Data	2WIRE00004910	2WIRE00004910		
243		Native Spreadsheet with Product Information and Data	2WIRE00005009	2WIRE00005009		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
244		Native Spreadsheet with Product Information and Data	2WIRE00005010	2WIRE00005010		
245		Native Spreadsheet with Product Information and Data	2WIRE00005011	2WIRE00005011		
246		Native Spreadsheet with Product Information and Data	2WIRE00005013	2WIRE00005013		
247	7/18/2012	Pace Installation Guide HomePortal Intelligent Gateway 5168NV	2WIRE00006203	2WIRE00006222		
248	9/27/2012	Pace Product Requirement Document (PRD) 10.1.1 Release, Version 1.3	2WIRE00007413	2WIRE00007429		
249	5/20/2013	Pace Product Requirement Document (PRD) 10.1.1 Release, Version 1.5	2WIRE00007458	2WIRE00007476		
250	2/13/2012	PowerPoint Presentation Entitled "NMD 10.1.1 (Reventon) Content	2WIRE00007504	2WIRE00007506		
251	2/6/2012	Pace Product Requirement Document (PRD) 10.3.1 Release, Version 0.3	2WIRE00007508	2WIRE00007517		
252	2/23/2010	2Wire 5138/5168N(V) Product Requirements Document	2WIRE00007523	2WIRE00007583		
253	2/23/2010	2Wire 5138/5168N(V) Product Requirements Document	2WIRE00007584	2WIRE00007647		
254	2/23/2010	2Wire 5138/5168N(V) Product Requirements Document	2WIRE00007648	2WIRE00007713		
255		Native Spreadsheet with Product Information and Data	2WIRE00007715	2WIRE00007715		
256		Gateway Product Requirement Document Lanai PRD Version 1.0	2WIRE00007818	2WIRE00007870		
257	9/10/2009	2Wire Gateway Product Requirement Document Hawaii MR1 Gateway Firmware Release, Version 0.9	2WIRE00007871	2WIRE00007886		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
258		Gateway Product Requirement Document Lanai PRD Version 1.0	2WIRE00007921	2WIRE00007973		
259	10/18/2003	Pace Product Requirements Document (PRD) 10.5.1 Release Version 0.6	2WIRE00007996	2WIRE00008009		
260	7/22/2011	Pace Software Product Requirements Document (PRD) 9.8.x Release for 5168 (AT&T) Version 1.2	2WIRE00008300	2WIRE00008323		
261		Native Spreadsheet with Product Information and Data	2WIRE00008324	2WIRE00008324		
262		Native Spreadsheet with Product Information and Data	2WIRE00008325	2WIRE00008325		
263		Native Spreadsheet with Product Information and Data	2WIRE00008326	2WIRE00008326		
264		Native Spreadsheet with Product Information and Data	2WIRE00008327	2WIRE00008327		
265		Native Spreadsheet with Product Information and Data	2WIRE00008328	2WIRE00008328		
266		Native Spreadsheet with Product Information and Data	2WIRE00008329	2WIRE00008329		
267	3/6/2014	Pace CR1271 Functional Specification RGW Gateway Platform Support	2WIRE00008569	2WIRE00008572		
268	2/23/2010	2Wire 5138/5168N(V) Product Requirements Document	2WIRE00009681	2WIRE00009741		
269		Native Spreadsheet With Testing Data	2WIRE00012048	2WIRE00012048		
270		Native Spreadsheet With Testing Data	2WIRE00012049	2WIRE00012049		
271		Native Spreadsheet With Testing Data	2WIRE00013680	2WIRE00013680		
272		Native Spreadsheet With Testing Data	2WIRE00013696	2WIRE00013696		
273		Native Spreadsheet With Testing Data	2WIRE00013698	2WIRE00013698		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
274		Native Spreadsheet With Testing Data	2WIRE00013703	2WIRE00013703		
275		Native Spreadsheet With Testing Data	2WIRE00013704	2WIRE00013704		
276		Native Spreadsheet With Testing Data	2WIRE00013733	2WIRE00013733		
277		Engineering QA Test Document ADSL Physical Layer Test Result, Revision 0.20	2WIRE00013795	2WIRE00013804		
278		Engineering QA Test Document ADSL Physical Layer Test Results for 5.29.117.8	2WIRE00014396	2WIRE00014403		
279		Native Spreadsheet With Testing Data	2WIRE00016291	2WIRE00016291		
280		Native Spreadsheet With Testing Data	2WIRE00016293	2WIRE00016293		
281		Native Spreadsheet With Testing Data	2WIRE00016295	2WIRE00016295		
282		Native Spreadsheet With Testing Data	2WIRE00016298	2WIRE00016298		
283		Native Spreadsheet With Testing Data	2WIRE00016299	2WIRE00016299		
284		Native Spreadsheet With Testing Data	2WIRE00019282	2WIRE00019282		
285		Native Spreadsheet With Testing Data	2WIRE00019381	2WIRE00019381		
286		Native Spreadsheet With Testing Data	2WIRE00019386	2WIRE00019386		
287		Native Spreadsheet With Testing Data	2WIRE00019388	2WIRE00019388		
288		Native Spreadsheet With Testing Data	2WIRE00019435	2WIRE00019435		
289		Native Spreadsheet With Testing Data	2WIRE00019437	2WIRE00019437		
290		Engineering QA Test Document ADSL Physical Layer Test Result, Version 7.2.6	2WIRE00019578	2WIRE00019585		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
291		Native Spreadsheet With Testing Data	2WIRE00019636	2WIRE00019636		
292		Native Spreadsheet With Testing Data	2WIRE00019642	2WIRE00019642		
293	1/14/2009	2Wire Engineering QA Test Document Bonded iNID VDSL2 Physical Layer Test Result	2WIRE00019661	2WIRE00019717		
294		Native Spreadsheet With Testing Data	2WIRE00019719	2WIRE00019719		
295		Native Spreadsheet With Testing Data	2WIRE00021531	2WIRE00021531		
296		Engineering QA Test Document Hana 6.3.5 ADSL Physical Layer Test Result	2WIRE00021576	2WIRE00021586		
297		Native Spreadsheet With Testing Data	2WIRE00021589	2WIRE00021589		
298		Native Spreadsheet With Testing Data	2WIRE00021648	2WIRE00021648		
299		Native Spreadsheet With Testing Data	2WIRE00021651	2WIRE00021651		
300		Native Spreadsheet With Testing Data	2WIRE00022708	2WIRE00022708		
301		Native Spreadsheet with Product Information and Data	2WIRE00022998	2WIRE00022998		
302		2Wire iNID and iPSU Installation Guide i3812V	2WIRE00022999	2WIRE00023046		
303		2Wire iNID User Guide i3812V	2WIRE00023047	2WIRE00023178		
304		Native Spreadsheet With Testing Data	2WIRE00023532	2WIRE00023532		
305		Native Spreadsheet with Product Information and Data	2WIRE00023533	2WIRE00023533		
306		2Wire iNID and iPSU Installation Guide Release 1.0 Rev. 003	2WIRE00023588	2WIRE00023637		
307		Native Spreadsheet with Product Information and Data	2WIRE00031967	2WIRE00031967		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
308		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000001	TQD-2WIRE 000001		
309		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000002	TQD-2WIRE 000002		
310		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000003	TQD-2WIRE 000003		
311		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000004	TQD-2WIRE 000004		
312		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000005	TQD-2WIRE 000005		
313		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000006	TQD-2WIRE 000006		
314		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000975	TQD-2WIRE 000975		
315		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000976	TQD-2WIRE 000976		
316		Native Spreadsheet With Data Pertaining to Carriers and Subcarriers	TQD-2WIRE 000977	TQD-2WIRE 000977		
317		2Wire HomePortal INID Outdoor Residential Gateway Data Sheet	TQD017541	TQD017542		
318		Bill of Materials for I3812V INIDv2	2WIRE00004891	2WIRE00004891		401/402, 403, F
319		Bill of Materials for 5168N-110 Gateway	2WIRE00004905	2WIRE00004905		401/402, 403, F

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
320		Bill of Materials for 5168NV-110 Gateway	2WIRE00004906	2WIRE00004906		401/402, 403, F
321		Bill of Materials for I3800V	2WIRE00004908	2WIRE00004908		401/402, 403, F
322		Bill of Materials for I3802V INID	2WIRE00004909	2WIRE00004909		401/402, 403, F
323	5/30/2008	2Wire AT&T 6.1.3 MR2 PRD, Version 1.2	2WIRE00007743	2WIRE00007746		
324	1/25/2007	SaskTel 5.31.x PRD Rev 1.0	2WIRE00008014	2WIRE00008053		
325	1/3/2011	Oahu 6.7.x Product Requirements RGW Platform Release	2WIRE00008078	2WIRE00008096		
326	2/20/2013	Pace Product Requirement Document (PRD) 6.11.1 Release, Version 1.2	2WIRE00008156	2WIRE00008165		
327	2/7/2012	Pace RGW 6.9.1 (FKA Mauna Kea) Product Requirements	2WIRE00008194	2WIRE00008207		
328	6/5/2009	2Wire Gateway Product Requirement Document Hilo Gateway Firmware Release, Version 0.9	2WIRE00008256	2WIRE00008280		
329	3/9/2010	2Wire Maui Product Requirements	2WIRE00008281	2WIRE00008294		
330	4/10/2017	Arris Gateway Firmware Release Notes Version 10.5.6.529420 5268AC, Document Version 1.0	2WIRE000037912	2WIRE000037995		
331	7/15/2013	Letter From Matthew DelGiorno to Sean McGhie Re: DSL Patent Portfolio Licensing	2WIRE000047186	2WIRE000047200		
332	1/13/2014	Gateway Firmware Release Notes Version 6.11.1.24 for 3600HGV, 3800HGV-B, 3801HGV, i3812V, i38HG	2WIRE000052031	2WIRE000052085		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
333	11/13/2009	Amendment and Restatement of the License Agreement Between Lantiq and Aware, Inc.	AWARE000072	AWARE000104		
334	12/17/2012	Amendment "V" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001932	AWARE001933		
335	6/25/2012	Amendment "U" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001934	AWARE001935		
336	6/25/2012	Amendment "T" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001936	AWARE001938		
337	3/13/2012	Amendment "S" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001939	AWARE001941		
338	12/9/2011	Amendment "R" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001942	AWARE001944		
339	9/19/2011	Amendment "Q" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001945	AWARE001947		
340	3/11/2011	Amendment "O" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001948	AWARE001950		
341	12/1/2010	Amendment "N" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001951	AWARE001953		
342	6/1/2010	Amendment "M" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001954	AWARE001956		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
343	6/1/2010	Amendment "L" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001957	AWARE001959		
344	2/17/2010	Amendment "K" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001960	AWARE001962		
345	8/12/2009	Amendment "J" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001963	AWARE001965		
346	8/12/2009	Amendment "I" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001966	AWARE001968		
347	4/28/2009	Amendment "H" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001969	AWARE001971		
348	2/2/2009	Amendment "G" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001972	AWARE001974		
349	10/27/2008	Amendment "F" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001975	AWARE001977		
350	8/19/2008	Amendment "E" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001978	AWARE001980		
351	6/17/2008	Amendment #1 to Amendment "D" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001981	AWARE001984		
352	3/28/2008	Amendment "C" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware,	AWARE001985	AWARE001986		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
		Inc. and Analog Devices, Inc.				
353	3/30/2007	Amendment "B" to Amendment #3 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE001987	AWARE001989		
354	8/22/2003	Amendment #2 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE002022	AWARE002036		
355	1/20/2000	Amendment #1 to the Amendment and Source Code License Agreement Between Aware, Inc. and Analog Devices, Inc.	AWARE002037	AWARE002040		
356		2Wire, Inc. and Comit Systems, Inc. Denali Specification	[REDACTED]	[REDACTED]		
357	10/7/2016	[REDACTED]	[REDACTED]	[REDACTED]		
358		2Wire, Inc. and Comit Systems, Inc. Denali Specification	[REDACTED]	[REDACTED]		
359	4/12/2005	2Wire, Inc. and Comit Systems, Inc. Perseus Architecture Specification Document	[REDACTED]	[REDACTED]		
360	1/24/2014	[REDACTED]	[REDACTED]	[REDACTED]		
361	06/2004	ITU-T G.993.1 - Very High Speed Digital Subscriber Line Transceivers	2WIRE00030729	2WIRE00030956		
362	6/12/2006	AT&T Product Specifications for an ADSL Residential Gateway Version 1.01	2WIRE00004911	2WIRE00005003		
363		Pace 5268AC Data Sheet	2WIRE00037831	2WIRE00037833		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
364		Pace 5168N Data Sheet	TQD017525	TQD017526		
365		Pace 5168NV Data Sheet	TQD017527	TQD017528		
366	01/2007	2Wire HomePortal iNID Residential Gateway Data Sheet	TQD017539	TQD017540		
367	8/3/2013	Email from Matthew DelGiorno to Sean McGhie Re: TQ Delta / Pace / Patent licensing discussions	TQD021248	TQD021267		
368	10/30/2018	Expert Report of Dr. Kevin Almeroth - Family 2 - 2Wire			Almeroth F2 Ex. 3 Cooklev F2 Ex. 11	
369	7/2/2018	Appendix 2.1 - TQ Delta Infringement Contentions for U.S. Patent No. 7,453,881 - Claims 17 and 18 - Source Code Set [REDACTED]			Almeroth F2 Ex. 8	
370	7/2/2018	Appendix 2.2 - TQ Delta Infringement Contentions for U.S. Patent No. 7,453,881 - Claims 17 and 18 - Source Code Set [REDACTED]			Almeroth F2 Ex. 9	
371	1/30/2017	Claim Chart 2Wire-Pace i3812v [REDACTED] - US7,453,881 - G.998.2 - Claim 18			Almeroth F2 Ex. 10	
372	1/30/2017	Claim Chart 2Wire-Pace 5168NV [REDACTED] - US7,453,881 - G.998.2 - Claim 18			Almeroth F2 Ex. 11	
373	7/2/2018	Chart No. 2.5168NV.1 - US 7,453,881 - G.998.2 - Claim(s) 17, 18 - 2WIRE 5168NV [REDACTED]			Almeroth F2 Ex. 12	
374	11/2/2018	Opening Report of Todor Cooklev Regarding Infringement of U.S. Patent No. 7,453,881			Cooklev F2 Ex. 9 Almeroth F2 Ex. 13 Plaintiff's Ex. 124	

DTX No.	Date	Description	Beg Bates	es	Deposition Ex.	Objections
375		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 14	
376	12/13/2018	Reply Expert Report of Dr. Kevin C. Almeroth - Family 2 - 2Wire			Almeroth F2 Ex. 15	
377	11/29/2018	Rebuttal Expert Report of Dr. Martin Walker Regarding [REDACTED] Source Code as Used in Accused 2Wire Products - Family 2 Patents			Walker Ex. 2 Almeroth F2 Ex. 16	
378		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 18	
379		[REDACTED]	[REDACTED]	[REDACTED] 3	Almeroth F2 Ex. 19	
380		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 20	
381		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 21	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
382		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 22	
383		[REDACTED]	[REDACTED]	[REDACTED]	Almeroth F2 Ex. 23	
384	11/21/2017	Subpoena to Testify at a Deposition in a Civil Action - Christopher Cahill			Cahill Ex. 511	Incomplete (lacks objections and agreed scope)
385		Christopher Cahill's Curriculum Vitae			Cahill Ex. 512	
386	12/8/2014	Email From Michael Tzannes to Peter Heller, Michael Lund et al. Re: 2016 Redbones Holiday Lunch			Cahill Ex. 513	401/402, 403
387	1/17/2003	Assignment of Patent Application Nos. 10/264,258 and 60,327,440 From Marcos C. Tzannes, Edmund Reiter, and Christopher Cahill to Aware, Inc.	TQD036966	TQD036968	Cahill Ex. 515	
388	1/17/2003	Fee Transmittal for FY 2003 in the Amount of [REDACTED] for Patent Application No. 10/264,258			Cahill Ex. 517	401/402, 403
389		Exhibit 1 to Todor Cooklev's Expert Report			Cooklev F2 Ex. 10	
390	11/29/2018	Rebuttal Expert Report of Dr. Todor Cooklev			Cooklev F2 Ex. 12	
391	07/1997	The Atm Forum Technical Committee Inverse Multiplexing for ATM (IMA) Specification Version 1.0 - AF-PHY-0086.000	2WIRE00030964	2WIRE00031098	Cooklev F2 Ex. 13 Plaintiff's Jacobsen Ex. 14	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
392	12/21/2018	Reply Report of Todor Cooklev on Behalf of Plaintiffs Regarding Infringement of U.S. Patent No. 7,453,881			Plaintiff's Ex. 123	
393	7/12/2011	U.S. Patent No. 7,978,706 - Tzannes	TQD000267	TQD000281	Plaintiff's Ex. 126	MIL
394	4/16/2013	U.S. Patent No. 8,422,511 - Tzannes	TQD000407	TQD000423	Plaintiff's Ex. 127	MIL
395	9/9/2014	U.S. Patent No. 8,831,031 - Tzannes	TQD041100	TQD041117	Plaintiff's Ex. 128	MIL
396	4/21/2015	U.S. Patent No. 9,014,193 - Tzannes	TQD041118	TQD041135	Plaintiff's Ex. 129	MIL
397	11/2/2018	Opening Expert Report of Dr. Krista S. Jacobsen for Family 2 Patents			Plaintiff's Jacobsen Ex. 11	802
398	12/21/2018	Reply Expert Report of Dr. Krista S. Jacobsen for Family 2 Patents			Plaintiff's Jacobsen Ex. 12	802
399	11/30/2018	Rebuttal Expert Report of Dr. Krista S. Jacobsen on Non-Infringement of Family 2 Patents			Plaintiff's Jacobsen Ex. 13	802
400	10/18/2005	U.S. Patent No. 6,956,872 - Djokovic	2WIRE00031817	2WIRE00031832	Plaintiff's Jacobsen Ex. 15	
401	4/24/2001	U.S. Patent No. 6,222,858 - Counterman	2WIRE00026281	2WIRE00026297	Plaintiff's Jacobsen Ex. 16	
402	01/2001	Fabio Sakuray et al., <i>Cell Transfer Delay Monitoring in ATM Networks</i> (2001)			Plaintiff's Jacobsen Ex. 17	
403		Excerpts From ATM, Networks and LANs - NOC '96 (D. W. Faulkner and A. L. Harmer, eds., Amsterdam : IOS, 1996)			Plaintiff's Jacobsen Ex. 18	
404		Carsten Roppel, <i>Estimating Cell Transfer Delay in ATM Networks Using In-Service Monitoring Methods</i> (1995 IEEE)			Plaintiff's Jacobsen Ex. 19	
405	6/27/2006	U.S. Patent No. 7,068,657 - Keller-Tuberg	2WIRE00028268	2WIRE00028294	Plaintiff's Jacobsen Ex. 20	

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
406	8/5/1999	PCT Application No. PCT/No99/00024, WO 99/39468 (Edvardsen)	2WIRE00031501	2WIRE00031530	Plaintiff's Jacobsen Ex. 21	
407	8/3/2004	U.S. Patent No. 6,772,388 - Cooper	2WIRE00026803	2WIRE00026814	Plaintiff's Jacobsen Ex. 22	
408	1/24/2019	Errata - Rebuttal Report of Dr. Todor Cooklev on Validity of Family 2 Submitted November 29, 2018				
409	2/5/2019	[REDACTED]				802
410	08/2001	[REDACTED] Forum Technical Report - TR-042 - ATM Ter ADSL Recommendation (Update to [REDACTED])	2WIRE00025012	2WIRE00025045		
411	3/4/1997	U.S. Patent No. 5,608,733 - Vallee	2WIRE00025587	2WIRE00025599		401/402, 403 MIL
412	6/18/2012	U.S. Patent No. 6,408,005 - Fan	2WIRE00026096	2WIRE00026116		401/402, 403 MIL
413	3/20/2001	U.S. Patent No. 6,205,142 - Vallee	2WIRE00026121	2WIRE00026146		401/402, 403 MIL
414	5/28/2002	U.S. Patent No. 6,396,837 - Wang	2WIRE00026150	2WIRE00026159		401/402, 403 MIL
415	1/23/2001	U.S. Patent No. 6,178,448 - Gray	2WIRE00026163	2WIRE00026186		401/402, 403 MIL
416	9/6/2005	U.S. Patent No. 6,941,252 - Nelson	2WIRE00026378	2WIRE00026390		401/402, 403 MIL
417	8/10/2004	U.S. Patent No. 6,775,268 - Wang	2WIRE00026423	2WIRE00026441		401/402, 403 MIL
418	1/20/2004	U.S. Patent No. 6,680,954 - Cam	2WIRE00026489	2WIRE00026502		401/402, 403 MIL
419	3/10/1998	U.S. Patent No. 5,727,951 - Holender	2WIRE00026604	2WIRE00026647		401/402, 403 MIL
420	4/1/1997	U.S. Patent No. 5,617,417 - Sathe	2WIRE00026683	2WIRE00026701		401/402, 403 MIL
421	11/23/2004	U.S. Patent No. 6,822,960 - Manchester	2WIRE00027738	2WIRE00027779		401/402, 403 MIL

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
422	3/11/2008	U.S. Patent No. 7,343,543 - Mantha	2WIRE00028204	2WIRE00028217		401/402, 403 MIL
423	6/14/2000	EP1009154(A2) - Aravamudan	2WIRE00028322	2WIRE00028339		401/402, 403 MIL
424	6/8/2004	U.S. Patent No. 6,747,964 - Bender	2WIRE00028566	2WIRE00028577		401/402, 403 MIL
425	12/14/1999	U.S. Patent No. 6,002,670 - Rahman	2WIRE00031399	2WIRE00031404		401/402, 403 MIL
426	8/10/2004	U.S. Patent No. 6,775,320 - Tzannes	2WIRE00031638	2WIRE00031650		401/402, 403 MIL
427	2/19/2019	Declaration of Dr. Martin Walker in Support of Defendant 2Wire, Inc.'s Motion for Summary Judgment of Non-Infringement of Claims 17-18 of U.S. Patent No. 7,453,881 (Family 2) and Exhibits 1-3				802
428	08/2012	Broadband Forum Technical Report - TR-273 - Testing of Bonded, Multi-Pair xDSL Systems Issue: 1	COOKLEV 002596	COOKLEV 002622		
429	01/2004	IEEE-SA Standards Board Operations Manual	2WIRE00054714	2WIRE00054752		
430	04/2002	IEEE Standards Style Manual	2WIRE00054609	2WIRE00054660		
431	3/5/2019	Declaration of Todor Cooklev, Ph.D. in Support of TQ Delta's Opposition to 2Wire's Motion to Exclude the Expert Testimony of Dr. Todor Cooklev for Family 2 and Exhibits A-F				
432	12/28/2018	Rebuttal Expert Report of Dr. Martin Walker Regarding Broadcom Source Code as Used in Accused 2Wire Products - Family 3 Patents				802
433	2/19/2019	Declaration of Todor Cooklev, Ph.D.				
434	2/19/2019	Declaration of Kevin C. Almeroth and Supporting Exhibits				
435	10/18/2012	Assignment Related Documents Between TQ Delta, LLC and Aware, Inc.	TQD036981	TQD037015		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
436		5168NV Data Sheet	TQD017527	TQD017528		
437		██████████	2WIRE00022711	2WIRE00022711		401/402, 403
438		██████████	2WIRE00031967	2WIRE00031967		
439	10/4/2002	File History for U.S. Patent Application No. 10/264,258	TQD000897	TQD001089		
440	11/13/2009	Amendment and Restatement of the License Agreement Between Lantiq and Aware, Inc.	TQD020788	TQD020820		
441	5/9/2001	Compilation of Documents Related to Development and Licensing Between Aware, Inc., Metanonia and SigmaTel, Inc.	TQD020821	TQD020853		
442	10/6/2002	Compilation of Documents Related to Development and Licensing Between Aware, Inc., and NEC Corporation	TQD020854	TQD020889		
443	12/6/2013	Email From Dave Cordeiro to Matt DelGiorno Re: Pace/TQD	TQD020904	TQD020906		No obj. assuming other post-suit negotiation are not objected to, otherwise incomplete
444	1/30/2001	U.S. Patent No. 6,182,264 - Ott	TQD030143	TQD030154		401/402, 403
445	11/9/1999	New Provisional Application Transmittal Letter for Application No. 60/164,134	TQD036943	TQD036949		
446	2015	Print-out From TQ Delta's Website Regarding "Who We Are"	TQD036950	TQD036950		401/402, 403
447	6/13/2000	Assignment From Michael Tzannes et al. to Aware, Inc. of Application No. 09/581,400	TQD036960	TQD036965		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
448	9/27/2012	Amended and Restated Limited Liability Company Agreement of TQ Delta, LLC	TQD037016	TQD037039		401/402, 403
449	8/21/2012	Limited Liability Company Agreement of TQ Delta, LLC	TQD037058	TQD037059		401/402, 403
450	10/5/2012	Common Interest Agreement Between Sheridan Ross, PC and Tzannes Patent Management LLC	TQD037128	TQD037132		401/402, 403
451	9/30/2013	ITU Temporary Document 2013-09-Q4-022 re: G.vdsl, G.inp: LPM Proposal	TQD037144	TQD037148		401/402, 403
452		TechQuity DSL/MoCA Standard Essential Assets Investment	TQD103811	TQD103812		401/402, 403
453	12/26/2008	IEEE Std 802.3-2008 - Part 3: Carrier Sense multiple access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications	TQD109268	TQD112244		
454	01/2005	ITU-T G.992.3 - Asymmetric digital subscriber line transceivers 2 (ADSL2)	TQD112885	TQD113320		
455	04/2009	ITU-T G.992.3 Annex C - Asymmetric digital subscriber line transceivers 2 (ADSL2) Annex C: Specific requirements for an ADSL system operating in the same cable as ISDN as defined in Appendix III of Recommendation ITU-T G.961	TQD113321	TQD113616		
456	04/2009	ITU-T G.992.3 - Asymmetric digital subscriber line transceivers 2 (ADSL2)	TQD113617	TQD114020		
457	01/2005	ITU-T G.992.5 - Asymmetric Digital Subscriber Line (ADSL) transceivers - Extended bandwidth ADSL2 (ADSL2+)	TQD114021	TQD114130		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
458	01/2009	ITU-T G.992.5 Annex C - Asymmetric digital subscriber line transceivers 2 (ADSL2) - Extended bandwidth (ADSL2plus) Annex C: Specific requirements for an ADSL system operating in the same cable as ISDN as defined in Appendix III of Recommendation ITU-T G.961	TQD114131	TQD114196		
459	01/2009	ITU-T G.992.5 - Asymmetric digital subscriber line transceivers 2 (ADSL2) - Extended bandwidth (ADSL2plus)	TQD114197	TQD114306		
460	02/2006	ITU-T G.993.2 - Very high speed digital subscriber line transceivers 2 (VDSL2)	TQD114307	TQD114558		
461	08/2008	ITU-T G.993.2 Amendment 3 - Very high speed digital subscriber line transceivers 2 (VDSL2) Amendment 3: Support for emergency rate adjustment, specification of test parameter accuracy and other improvements	TQD114559	TQD114646		
462	12/2011	ITU-T G.993.2 - Very high speed digital subscriber line transceivers 2 (VDSL2)	TQD114647	TQD115022		
463	6/28/2012	ITU-T Website Information Regarding G.993.2 (2011) Amendment 1	TQD115023	TQD115023		
464	01/2005	ITU-T G.998.1 - ATM based multi-pair bonding	TQD115406	TQD115441		
465	01/2005	ITU-T G.998.2 - Ethernet-based multi-pair bonding	TQD115442	TQD115459		
466		Bill of Materials for 5268	2WIRE00037834	2WIRE00037834		401/402, 403
467		Bill of Materials for 5268	2WIRE00037835	2WIRE00037835		401/402, 403
468		Bill of Materials for 5268N	2WIRE00037852	2WIRE00037852		401/402, 403
469	04/2010	iNID Data Sheet	2WIRE00051792	2WIRE00051795		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
470	1/29/1998	T1E1.4/98-024 - Liaison from T1E1.4 (T1E1.4/98-024) regarding performance requirements for ADSL	2WIRE00052159	2WIRE00052167		401/402, 403
471	5/22/2018	Letter From Curtis Brownmiller to Tom Starr Re: Liaison to T1E1.4 on ADSL Performance Parameters	2WIRE00052168	2WIRE00052175		401/402, 403
472	6/14/2004	ITU-T LB-U07 - G.bond Issues List	2WIRE00054797	2WIRE00054806		
473	6/14/2004	ITU-T LB-U07R1 - G.bond Issues List	2WIRE00054807	2WIRE00054816		401/402, 403, UT, F
474		Test Data	2WIRE00054817	2WIRE00054817		401/402, 403, UT, F
475		Test Data	2WIRE00054818	2WIRE00054818		401/402, 403, UT, F
476		Test Data	2WIRE00054819	2WIRE00054819		401/402, 403, UT, F
477		Test Data	2WIRE00054820	2WIRE00054820		401/402, 403, UT, F
478		Test Data	2WIRE00054821	2WIRE00054821		401/402, 403, UT, F
479		Test Data	2WIRE00054822	2WIRE00054822		401/402, 403, UT, F
480		Test Data	2WIRE00054823	2WIRE00054823		401/402, 403, UT, F
481		Test Data	2WIRE00054824	2WIRE00054824		401/402, 403, UT, F
482		Test Data	2WIRE00054825	2WIRE00054825		401/402, 403, UT, F
483		Test Data	2WIRE00054826	2WIRE00054826		401/402, 403, UT, F
484		Test Data	2WIRE00054827	2WIRE00054827		401/402, 403, UT, F
485		Test Data	2WIRE00054828	2WIRE00054828		401/402, 403, UT, F
486		Test Data	2WIRE00054829	2WIRE00054829		401/402, 403, UT, F

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
487		Test Data	2WIRE00054830	2WIRE00054832		401/402, 403, UT, F
488		Test Data	2WIRE00054833	2WIRE00054833		401/402, 403, UT, F
489		Test Data	2WIRE00054834	2WIRE00054834		401/402, 403, UT, F
490		Test Data	2WIRE00054835	2WIRE00054835		401/402, 403, UT, F
491		Test Data	2WIRE00054836	2WIRE00054836		401/402, 403, UT, F
492		Test Data	2WIRE00054837	2WIRE00054837		401/402, 403, UT, F
493		Test Data	2WIRE00054838	2WIRE00054838		401/402, 403, UT, F
494		Test Data	2WIRE00054839	2WIRE00054839		401/402, 403, UT, F
495		Test Data	2WIRE00054840	2WIRE00054840		401/402, 403, UT, F
496		Test Data	2WIRE00054841	2WIRE00054841		401/402, 403, UT, F
497		Test Data	2WIRE00054842	2WIRE00054842		401/402, 403, UT, F
498		Test Data	2WIRE00054843	2WIRE00054843		401/402, 403, UT, F
499		Test Data	2WIRE00054844	2WIRE00054844		401/402, 403, UT, F
500		Test Data	2WIRE00054845	2WIRE00054845		401/402, 403, UT, F
501		Test Data	2WIRE00054846	2WIRE00054846		401/402, 403, UT, F
502		Test Data	2WIRE00054847	2WIRE00054847		401/402, 403, UT, F
503		Test Data	2WIRE00054848	2WIRE00054848		401/402, 403, UT, F
504		Test Data	2WIRE00054849	2WIRE00054849		401/402, 403, UT, F

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
505		Test Data	2WIRE00054850	2WIRE00054850		401/402, 403, UT, F
506		Test Data	2WIRE00054851	2WIRE00054851		401/402, 403, UT, F
507		Test Data	2WIRE00054852	2WIRE00054852		401/402, 403, UT, F
508		Test Data	2WIRE00054853	2WIRE00054853		401/402, 403, UT, F
509		Test Data	2WIRE00054854	2WIRE00054854		401/402, 403, UT, F
510		Test Data	2WIRE00054855	2WIRE00054855		401/402, 403, UT, F
511		Test Data	2WIRE00054856	2WIRE00054856		401/402, 403, UT, F
512		Test Data	2WIRE00054857	2WIRE00054857		401/402, 403, UT, F
513		Test Data	2WIRE00054858	2WIRE00054858		401/402, 403, UT, F
514		Test Data	2WIRE00054859	2WIRE00054859		401/402, 403, UT, F
515		Test Data	2WIRE00054860	2WIRE00054860		401/402, 403, UT, F
516		Test Data	2WIRE00054861	2WIRE00054861		401/402, 403, UT, F
517		Test Data	2WIRE00054862	2WIRE00054862		401/402, 403, UT, F
518		Test Data	2WIRE00054863	2WIRE00054863		401/402, 403, UT, F
519		Test Data	2WIRE00054864	2WIRE00054864		401/402, 403, UT, F
520		Test Data	2WIRE00054865	2WIRE00054865		401/402, 403, UT, F
521	3/15/2016		2WIRE00054867	2WIRE00054952		
522		D. Rauschmayer, "Adsl/Vdsl Principles: A Practical and Precise Study of Asymmetric Digital Subscriber Lines and Very High Speed Digital Subscriber Lines"				SJ, 401/402, 403, 802, F,

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
						UT
523		Charles K. Summers, ADSL Standards, Implementation and Architecture (Saba Zamir ed., 1st Ed. 1999)				
524	03/1999	The Atm Forum Technical Committee Inverse Multiplexing for ATM (IMA) Specification Version 1.1				
525	1996	K. Slower et al., The PPP Multilink Protocol (MP), RFC 1990, Standards Track				401/402, 403
526	2/2001	ITU-T G.991.2 – Single-pair high-speed digital subscriber line (SHDSL) transceivers				401/402, 403
0562	3/8/2004	ITU-T MC-049 – G.bond – Proposed working text for Ethernet Specific Bonding	2WIRE00054953	2WIRE00054967		UT, 401-403, Foundation
0563	3/8/2004	ITU-T MC-049R1 – G.bond – Proposed working text for Ethernet Specific Bonding	2WIRE00054968	2WIRE00054982		UT, 401-403, Foundation
	Physical Exhibits					
527	3/4/2018	2Wire Source Code Print-outs - C:\Users\CodeReview\Desktop\biNID\biNID\head\firmware\tw\main.c	2WIRE-SC-0000005	2WIRE-SC-0000007		
528	3/4/2018	2Wire Source Code Print-outs - C:\Users\CodeReview\Desktop\src_10.5\libdsl\libdsl.c	2WIRE-SC-0000008	2WIRE-SC-0000008		
529	3/4/2018	2Wire Source Code Print-outs - C:\Users\CodeReview\Desktop\biNID\biNID\head\RE ADME.TXT	2WIRE-SC-0000009	2WIRE-SC-0000010		
530	3/4/2018	2Wire Source Code Print-outs - C:\Users\CodeReview\Desktop\biNID\biNID\head\firmware\tw\paf.c	2WIRE-SC-0000011	2WIRE-SC-0000018		

DTX No.	Date	Description	Beg Bates	End Bates	Deposition Ex.	Objections
543	9/25/2018	[REDACTED]	[REDACTED]	[REDACTED]		
544	9/25/2018	[REDACTED]	[REDACTED]	[REDACTED]		
545	9/27/2018	[REDACTED]	[REDACTED]	[REDACTED]		
546	10/11/2018	[REDACTED]	[REDACTED]	[REDACTED]		
547	1/25/2019	[REDACTED]	[REDACTED]	[REDACTED]		401/402, 403, UT
548	1/28/2019	[REDACTED]	[REDACTED]	[REDACTED]		401/402, 403, UT
549	3/15/2019	[REDACTED]	[REDACTED]	[REDACTED]		
550	9/25/2018	Data Associated With Test Reports Cited in TQ Delta's Infringement Contentions	TQD-2WIRE 001325	TQD-2WIRE 001325		
551	10/1/2018	Data Associated With Test Report PA38-ZY17-V9-092518-093330	TQD-2WIRE 001326	TQD-2WIRE 001326		
552		Product Sample - 5168N				
553		Product Sample - 5168NV				
554		Product Sample - 5031NV				
555		Product Sample - 5268AC				
556		Product Sample - I3812v				
557		Product Sample - [REDACTED]				
558		Product Sample - [REDACTED]				

DTX No.	Date	Description	Beg Bates	[REDACTED]	Deposition Ex.	Objections
559		Implementation and Applications of DSL Technology (Philip Golden, Herve Dedieu, and Krista S. Jacobsen, eds., Auerbach Publications, 2008)				
560		Fundamentals of DSL Technology (Philip Golden, Herve Dedieu, and Krista S. Jacobsen, eds., Auerbach Publications, 2006)				
561	4/3/2018	[REDACTED] S [REDACTED]	[REDACTED]	[REDACTED]		401/402, 403, UT

EXHIBIT 8

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

TQ DELTA’S TRIAL WITNESS LIST

I. “WILL CALL” LIST

TQ Delta “will call” at least the following witnesses for its Family 2 trial:

- Dr. Todor Cooklev

II. MAY CALL LIST

TQ Delta “may call” live and/or by deposition designation the following witnesses for its Family 2 trial:

- Abha Divine
- Mark Roche
- Marcos Tzannes
- Dr. Kevin Almeroth
- Michael Tzannes (deposition designations attached hereto as Exhibit 8a)
- Benjamin Miller (deposition designations attached hereto as Exhibits 8b and 8c)
- Scott Voegelé (deposition designations attached hereto as Exhibit 8d)
- Mehul Patel (deposition designations attached hereto as Exhibit 8e)
- James Shead (deposition designations attached hereto as Exhibit 8f)
- Dr. Krista Jacobsen (deposition designations attached hereto as Exhibits 8g and 8h)

- Gong-San Yu (deposition designations attached hereto as Exhibits 8i and 8j)
- Christopher Cahill (deposition designations attached hereto as Exhibits 8k)
- All witnesses named on 2Wire's witness list

TQ DELTA, LLC, v. 2WIRE, INC.,
C.A. No. 13-cv-1835-RGA

Code	Ground
401/402	Not relevant. Fed. R. Evid. 401, 402
403	Unduly prejudicial, confusing, wasteful, or cumulative. Fed. R. Evid. 403
701	Improper lay opinion. Fed. R. Evid. 701
702	Improper expert testimony. Fed. R. Evid. 702, 703
802	Hearsay if offered for the truth of the matter asserted. Fed. R. Evid. 802
901	Requires authenticity or identification. Fed. R. Evid. 901
1002	Violates best evidence rule. Fed. R. Evid. 1002
1006	Improper summary. Fed. R. Evid. 1006
CC	Related to claim construction
D	Duplicate
Daub	Subject to exclusion pending Daubert Motion
DESC	Inadequate, misleading, or improper description
F	Lacks foundation/lacks personal knowledge/speculation. Fed. R. Evid. 104, 602, 1003, 1005
FL	Foreign language document
ILL	Illegible
UT	Untimely disclosed/not produced in discovery
MIL	Subject to pending MIL issue
SAN	Subject to pending motion for sanctions
M	Mismatch (marked exhibit and exhibit list description do not match)
NE	Not Evidence
NS	Exhibit not stamped with trial exhibit number
OS	Outside Scope of Rule 30(b)(6) Topic
SJ	Subject to exclusion pending Motion for Summary Judgment

EXHIBIT A

TQ Delta's Preliminary Deposition Designations

[illegible]

TQ Delta's Deposition Designations of Michael Tzannes 9-11-18					
Designations	Objections(s)	Ruling	Counter-Designations	Objection(s) to Counter-designation	Reply Designation

EXHIBIT B

TQ Delta's Preliminary Deposition Designations

[illegible]

EXHIBIT C

TQ Delta's Preliminary Deposition Designations

TQ Delta's Deposition Designations of Benjamin Miller (2) – 09-20-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objection(s)
7:4-14				
8:1-5				
8:8-25				
9:4-11:15				
12:12-13:16	401/402			
18:15-23				
36:20-37:2			36:15–20	
43:15-17				
45:5-9			44:14–45:4	
49:5-9			48:4–49:4	401
56:8-15			56:16	
61:20-62:3				
63:10-12				
65:24-66:1				
74:21-75:8				
77:6-22			77:23–79:18	
78:2-6			77:23–79:18	
79:20-80:18				
84:18-20	OS			
84:21-24	OS			
85:3-7				
85:12-16				
86:3-9				
86:13-15				
86:19-24				
87:6-11	OS, F			
87:14-19	OS, F			
88:2-5	OS, F			

TQ Delta's Deposition Designations of Benjamin Miller (2) – 09-20-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objection(s)
88:9-16	OS, F		88:2–5	
89:1-6			89:7–10	
91:5-7	OS, F			
91:15-93:9	OS, F		91:11–14	
93:19-94:9				
94:11-16				
95:13-15	OS, F			
95:17-19	OS, F			
99:15-18	OS			
99:23-100:1				
102:6-9				
102:11-14				
102:19-20			102:23–25	
103:1-4				
103:12-15				
104:9-15			104:16–105:10	
107:8-108:7				
109:3-110:25				
111:4-11				
145:20-146:1				
149:16-150:16	OS			
150:17-19	OS			
151:12-18	OS			
151:21-158:13	OS			
160:21-161:5			160:7–20	401
165:5-166:18	F			
167:13-15				
180:11-21	NE, 401/402, 403			
183:25-184:8			184:9–16	
184:17-25				

TQ Delta's Deposition Designations of Benjamin Miller (2) – 09-20-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objection(s)
185:1-187:15			187:16–188:6	
188:7-189:4				
190:1-2				
190:6-191:10				
192:1-197:12	F		197:13-17	
241:3-242:7			240:23–241:2	
242:24-246:3	OS, F			

EXHIBIT D

TQ Delta's Preliminary Deposition Designations – Family 2

TQ Delta's Deposition Designations of Scott Voegele 3-21-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objections
7:6-7; 11-16				
18:15-18; 22-24				
20:1-5				
25:22-26:1				
38:3-15				
44:7-15	401/402, 403			
46:3-6			44:16-46:2	
46:23-47:12			46:11-22	
55:4-9				
60:13-15				
60:22-61:2				
63:11-20				
65:20-23	Missing question		65:22-24	65:24
66:1-13	401/402, 403			
67:4-9; 12-24				
68:9-13				
69:1-8				
70:21-71:7	401/402, 403		71:7	
71:16-73:21	401/402, 403			
74:14-17				
75:3-5	401/402, 403, OS			
79:17-80:1				
80:9-15				
82:7-11 BONDING				
84:10-17 BONDING				
85:5-11				
86:12-15 BONDING				
93:11-17	F, OS		93:19-94:6	

TQ Delta's Deposition Designations of Scott Voegelé 3-21-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objections
98:10-13	401/402, 403		97:14-98:9	
98:20-23	401/402, 403			
100:4-14; 17-19	401/402, 403			
105:12-22				
106:1-24 BONDING				
108:18-24 BONDING	401/402, 403, F			
109:23-110:8 F2 & F3	401/402, 403, F		110:9-16	
112:12-113:3	401/402, 403, F, OS		93:19-94:6	
124:9-23				
125:8-11				
155:14-16; 20-23	401/402, 403			
159:16-160:7	401/402, 403, F			
169:17-170:1			169:8-15	
170:16-24	401/402, 403			
171:17-20	401/402, 403			
172:12-173:5	401/402, 403			
177:2-6	401/402, 403			
179:12-180:12	401/402, 403			
184:24-185:6	401/402, 403			
185:17-21	OS, 401/402, 403, 802			
186:3-12; 15-19	OS, 401/402, 403, 802			
190:23-191:9	401/402, 403			
200:11-15	401/402, 403			
201:1-5	401/402, 403			
201:19-202:4	F, 1002, 401/402, 403			
203:13-204:4	OS, 401/402, 403			
210:14-21	401/402, 403			
216:2-13	401/402, 403			
221:18-20	401/402, 403		221:21	
222:14-223:2	401/402, 403, F			

TQ Delta's Deposition Designations of Scott Voegele 3-21-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objections
224:19-225:4	401/402, 403, F			

EXHIBIT E

TQ Delta's Preliminary Deposition Designations

[illegible]

TQ Delta's Deposition Designations of Mehul Patel			
Designations	Objections(s)	Ruling	Counterdesignations

EXHIBIT F

TQ Delta's Preliminary Deposition Designations

TQ Delta's Deposition Designations of James D. Shead 3-22-18			
Designations	Objections(s)	Ruling	Counter-Designations
8:14	401/402		
8:17-23	401/402		
27:2-4			
27:9-11			
40:18-22	401/402, 403		
49:1-8	401/402, 403		
49:11-16	401/402, 403		
49:19-21	401/402, 403OS		
50:2-5	401/402, 403, OS		
50:10-15	401/402, 403, OS		
50:20-23	401/402, 403, OS		
51:4-8	401/402, 403, OS		
51:13	401/402, 403, OS		
63:10-11	403		
63:17-18	403		
65:23-66:1	401/402, 403		
66:3	401/402, 403		
76:8-15	401/402, 403, MIL		
77:2-10	401/402, 403, MIL		
78:7-20	401/402, 403, MIL		
79:2-19	401/402, 403, MIL		
80:10-22	401/402, 403, MIL		81:5-11
81:12-13	401/402, 403, MIL		
81:17-21	401/402, 403, MIL		
84:12-13	401/402, 403, MIL		
84:19-85:8	401/402, 403, MIL		
85:15-86:6	401/402, 403, MIL		
87:14-15	401/402, 403, MIL		

TQ Delta's Deposition Designations of James D. Shead 3-22-18			
Designations	Objections(s)	Ruling	Counter-Designations
87:21-88:4	401/402, 403, MIL		
88:9-15	401/402, 403, MIL		88:5-8
88:22-89:16	401/402, 403, MIL		
92:7-8	401/402, 403, MIL		
92:13-15	401/402, 403, MIL		
92:18-20	401/402, 403, MIL, OS		
93:2-6	401/402, 403, MIL, OS		
93:11-12	401/402, 403, MIL		
97:6-98:1	401/402, 403, MIL		
103:20-24	401/402, 403, MIL		104:9-105:21
104:3-8	401/402, 403, MIL		
105:22-106:8	401/402, 403, MIL		
107:4-15	401/402, 403, MIL		
108:8-16	401/402, 403, MIL		108:17-109:6
109:7-11	401/402, 403, MIL		
109:14-16	401/402, 403, MIL		109:17-110:17
112:1-9	401/402, 403, MIL		
112:12-113:3	401/402, 403, MIL		
113:19-114:7	401/402, 403, MIL		
115:15-117:8	401/402, 403, 701, MIL		
117:23-118:1	401/402, 403, 701, MIL		
118:8-12	401/402, 403, MIL		
118:15-16	401/402, 403, MIL		
126:4-127:5	401/402, 403, MIL		
127:14-128:6	401/402, 403, MIL		
129:13-14	401/402, 403, MIL, OS, 701, 702		
129:18-21	401/402, 403, MIL, OS		
130:1	401/402, 403, MIL		
133:4-9	401/402, 403, MIL, OS, 701, 702		
133:13	401/402, 403, MIL, OS, 701, 702		

TQ Delta's Deposition Designations of James D. Shead 3-22-18			
Designations	Objections(s)	Ruling	Counter-Designations
135:2-4	OS, 401/402, 403, MIL		
135:11-14	OS, 401/402, 403, MIL		
135:21	401/402, 403, MIL		
137:5-20	401/402, 403, MIL		
137:22	401/402, 403, MIL		
138:1-2	401/402, 403, MIL		
138:11-17	401/402, 403, MIL		
138:22-139:6	401/402, 403, MIL		
139:24-140:1	401/402, 403, MIL		
140:7-8	401/402, 403, MIL		
140:17-19	401/402, 403, MIL		
140:23-141:7	401/402, 403, MIL		
143:1-9	401/402, 403, MIL		
143:17-22	401/402, 403, MIL		
145:6-146:1	401/402, 403, MIL		
151:6-15	401/402, 403, MIL		
154:2-3	401/402, 403, MIL		
154:6	401/402, 403, MIL		154:7-17
155:11-13	401/402, 403, MIL		
155:18-21	401/402, 403, MIL		
156:2	401/402, 403, MIL		
157:1-7	401/402, 403, MIL		
158:1-9	401/402, 403, MIL		
159:9-10	401/402, 403, MIL		
159:24-160:4	401/402, 403, MIL		
160:22-161:4	401/402, 403, MIL		
162:16-19	401/402, 403, MIL		
164:8-19	401/402, 403, MIL		
166:20-167:4	401/402, 403, MIL		
168:12-169:9	401/402, 403, MIL		

TQ Delta's Deposition Designations of James D. Shead 3-22-18			
Designations	Objections(s)	Ruling	Counter-Designations
170:21-23	401/402, 403, MIL		
171:1-2	401/402, 403, MIL		
173:14-17	401/402, 403		
174:22-24	401/402, 403		
175:3	401/402, 403		175:4-5
227:12-14	401/402, 403		
227:17	401/402, 403		

EXHIBIT G

TQ Delta's Preliminary Deposition Designations

[illegible]

TQ Delta's Deposition Designations of Dr. Krista Jacobsen, 01-11-2019			
Designations	Objections(s)	Ruling	Counter-Designations

EXHIBIT H

TQ Delta's Preliminary Deposition Designations

[illegible]

TQ Delta's Deposition Designations of Dr. Krista Jacobsen, 02-5-2019			
Designations	Objections(s)	Ruling	Counter-Designations

EXHIBIT I

TQ Delta's Preliminary Deposition Designations

TQ Delta's Deposition Designations of BCM Gong-San Yu - 05-22-18					
Designations	Objections(s)	Ruling	2Wire's Counter-Designations	Objections	TQD's Reply Designations
9:4-18					
10:12-16					
11:1-12:2			12:3-13:20		
17:21-20:24					
25:24-26:11					
34:2-34:3					
34:11-34:12					
91:20-93:13	401/402, 403, 802, 901, F		93:14-94:9		
94:12-17	401/402, 403, 802, 901, F				
119:5-19			118:9-119:4, 119:21-120:6, 120:8		
120:11-121:11			121:11-123:18, 123:20-23, 124:1-10		299:17-300:8; 302:13-304-25
236:11-16	401/402, 403, 802, 901, F		236:19-236:24		

EXHIBIT J

TQ Delta's Preliminary Deposition Designations

[illegible]

TQ Delta's Deposition Designations of [REDACTED]					
Designations	2Wire's Objections(s)	Ruling	2Wire's Counter-Designations	TQ Delta's Objections	TQD's Reply Designations

EXHIBIT K

TQ Delta's Preliminary Deposition Designations

TQ Delta's Deposition Designations of Christopher W. Cahill - 11-29-17			
Designations	Objections(s)	Ruling	Counterdesignations
	401/402		
6:19 – 7:4			
18:3-10			18:3
18:23 – 19:5			
21:7-9			
22:5-16 and 22:19-22			
24:17-25			
26:3-6			
26:23 – 27:9			
53:17 – 54:8			
54:25 – 55:2			
55:5-18			
56:3-10			
57:6-15			57:15-21
57:22-24 and 58:4-11			
62:15 – 63:9			
65:19-20 and 65:23 – 66:12			
72:14-23			
83:18-23 and 84:2			
84:3 – 84:6-12 and 84:16-23			
85:15-16 and 85:18 – 86:11			
86:14 – 89:14			86:20-25
92:12-18 and 92:20 – 93:8			
93:9-11 and 93:15			
93:16 – 94:6 and 94:7			
95:14-15 and 95:18 – 96:11			
98:21 – 99:12			
99:19 – 100:11			

TQ Delta's Deposition Designations of Christopher W. Cahill - 11-29-17			
Designations	Objections(s)	Ruling	Counterdesignations
113:22-25	401/402		

EXHIBIT 9

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 13-cv-1835-RGA
)	
v.)	
)	
2WIRE, INC.,)	
)	
Defendant.)	

2WIRE, INC.'S TRIAL WITNESS LIST

2Wire identifies the following witnesses that it will or may call at trial. This list and the accompanying deposition designations are based on the current status of the case and the Court's April 1, 2019 Order indicating that the Court does not "intend to try any FRAND, contract, damages, and equitable issues until after I have determined which patents asserted against 2Wire are valid and infringed," D.I. 1043, and the Court's April 10, 2019 Memorandum Opinion and Order, D.I. 1058, 1059. 2Wire reserves the right to modify or supplement this list and/or the deposition designations in light of further decisions or orders from this Court, any of TQ Delta's pretrial statements, and to the extent any amendments or other alterations arise impacting the facts or issues for trial.

I. "WILL CALL" LIST

2Wire "will call" at least the following witnesses for its Family 2 trial:

- Abha Divine (deposition designations attached hereto as Exhibit 9a)
- Dr. Krista Jacobsen
- Benjamin Miller
- Marcos Tzannes (deposition designations attached hereto as Exhibit 9b)
- Dr. Martin Walker

- Gong-San Yu (deposition designations attached hereto as Exhibit 9c)

II. “MAY CALL” LIST

2Wire “may call” live and/or by deposition designation the following witnesses for its Family 2 trial:

- Christopher Cahill (deposition designations attached hereto as Exhibit 9d)
- Peter Heller (deposition designations attached hereto as Exhibit 9i)
- Ed Reiter (deposition designations attached hereto as Exhibit 9e)
- Mark Roche (deposition designations attached hereto as Exhibit 9f)
- Kevin Russell (deposition designations attached hereto as Exhibit 9g)
- Michael Tzannes (deposition designations attached hereto as Exhibit 9h)
- All witnesses named on TQ Delta’s witness list

TQ DELTA, LLC, v. 2WIRE, INC.,
C.A. No. 13-cv-1835-RGA

Code	Ground
401/402	Not relevant. Fed. R. Evid. 401, 402
403	Unduly prejudicial, confusing, wasteful, or cumulative. Fed. R. Evid. 403
701	Improper lay opinion. Fed. R. Evid. 701
702	Improper expert testimony. Fed. R. Evid. 702, 703
802	Hearsay if offered for the truth of the matter asserted. Fed. R. Evid. 802
901	Requires authenticity or identification. Fed. R. Evid. 901
1002	Violates best evidence rule. Fed. R. Evid. 1002
1006	Improper summary. Fed. R. Evid. 1006
CC	Related to claim construction
D	Duplicate
Daub	Subject to exclusion pending Daubert Motion
DESC	Inadequate, misleading, or improper description
F	Lacks foundation/lacks personal knowledge/speculation. Fed. R. Evid. 104, 602, 1003, 1005
FL	Foreign language document
ILL	Illegible
UT	Untimely disclosed/not produced in discovery
MIL	Subject to pending MIL issue
SAN	Subject to pending motion for sanctions
M	Mismatch (marked exhibit and exhibit list description do not match)
NE	Not Evidence
NS	Exhibit not stamped with trial exhibit number
OS	Outside Scope of Rule 30(b)(6) Topic
SJ	Subject to exclusion pending Motion for Summary Judgment

EXHIBIT A

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 1			
Designations	Objections(s)	Ruling	Counter-Designations
4:1-5			
4:22-5:3			
9:2-13			
10:25-11-4			
11:7-10			
11:24-12:3	401/402; 403; MIL; OS		
12:6-7	401/402; 403; MIL; OS		
14:22-15:6	401/402; 403; MIL; OS		
15:10-13	401/402; 403; MIL; OS		
20:17-18	401/402; 403; MIL; OS		
20:21	401/402; 403; MIL; OS		
20:23-24	401/402; 403; MIL; OS		
21:2	401/402; 403; MIL; OS		
25:2-11	401/402; 403; MIL;		
25:17-18	401/402; 403; MIL;		
27:1-5	401/402; 403; MIL;		
29:14-30:5	401/402; 403; MIL;		
30:8-9	401/402; 403; MIL;		
30:14-21	401/402; 403; MIL;		
30:25-31:1	401/402; 403; MIL;		
32:20-24	401/402; 403; MIL; OS		
33:2	401/402; 403; MIL; OS		
33:4-6	401/402; 403; MIL; OS		
33:10	401/402; 403; MIL; OS		
35:15	401/402; 403; MIL; OS		
35:18-36-3	401/402; 403; MIL; OS		
36:6-9	401/402; 403; MIL; OS		
36:12-14	401/402; 403; MIL; OS		

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 1			
Designations	Objections(s)	Ruling	Counter-Designations
36:17-37:1	401/402; 403; MIL; remove atty speech (21-22, 24); Arg		
37:4-7	401/402; 403; MIL		
42:5-9	401/402; 403;		
42:11-24	401/402; 403;		
43:3	401/402; 403;		
43:5-8	401/402; 403;		
43:12	401/402; 403;		
43:14-15	401/402; 403;		
43:17-21	401/402; 403;		
44:15	401/402; 403; MIL; OS		
44:19-22	401/402; 403; MIL; OS		
45:1-2	401/402; 403; MIL; OS		
45:4-9	401/402; 403; MIL; OS		
45:13-16	401/402; 403; MIL; OS		
46:5-9	401/402; 403; MIL; OS		
46:16-17			
46:19			
46:22			
48:24-25	401/402; 403; MIL; OS		
51:3-14			
51:19-22			
54:22-55:4	401/402; 403;		
55:7-8	401/402; 403; MIL; OS		
55:12-18	401/402; 403; MIL; OS		
55:21-56:24	401/402; 403; MIL; OS		
57:2-7	401/402; 403; MIL; OS		
57:9-10	401/402; 403		
60:1-7			
60:9-10			

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 1			
Designations	Objections(s)	Ruling	Counter-Designations
62:5-13	401; 403; OS		

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 2				
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters
4:1-17				
5:9-13				
7:7-15			7:16-17	
7:18-20				
7:23-8:6				
8:10-25				
9:4				
9:9-12			9:14-15	
9:16-19				
11:18-13:13				
13:19-22			14:3-15; 16:9-24	Improper Counter, 1002
18:23-19-23				
20:8-18				
21:6-17				
22:11-24:8			31:18-32:10; 32:15-33:18; 34:1-14; 35:3-8; 35:25-36:3; 36:7-8; 36:10-37:12.	Improper Counter, 1002
24:11-21				
24:25-25:6				
26:1-27:14				
28:12-20				
29:3-25				

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 2				
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters
30:24-31:9				
31:12-16				
31:18-25				
32:14-34:1				
34:4-7				
34:9-17				
34:24-35:2				
35:4-35:12				
35:14-17				
35:19-36:17				
36:23-37:1				
37:3-38:16			38:25-39:3; 39:8-22; 40:1-3; 40:6-17	Improper Counter, 401/402, 403, 802, 1002, MIL
40:18-42:5				
42:9-45:16			56:4-8; 56:13-57:23; 58:3-7; 58:11-14; 58:21-59:24; 60:2-4; 62:20-63:11; 67:14-22; 69:13-25; 70:24-71:3; 71:6-11; 71:23-73:7; 73:11-73:20	Improper Counter, 401/402, 403, 802, 1002, MIL
45:20-46:3				
47:5-8				
47:10-19			56:4-8; 56:13-57:23; 58:3-7; 58:11-14; 58:21-59:24; 60:2-4; 62:20-63:11; 67:14-22; 69:13-25; 70:24-71:3; 71:6-11; 71:23-73:7; 73:11-73:20	Improper Counter, 401/402, 403, 802, 1002, MIL
49:16-50:6			56:4-8; 56:13-57:23:	Improper Counter,

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 2				
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters
			58:3-7; 58:11-14; 58:21-59:24; 60:2-4; 62:20-63:11; 67:14-22; 69:13-25; 70:24-71:3; 71:6-11; 71:23-73:7; 73:11-73:20	401/402, 403, 802, 1002, MIL

2Wire's Deposition Designation of Abha Divine 9-13-18 – Part 3			
Designations	Objections(s)	Ruling	Counter-Designations
4:21-25	401/402; 403; MIL		
5:11-21	401; 403; MIL; OS; Legal Concl; F		
12:12-17	401; 403; MIL; OS; Legal Concl; F		
12:23-13:1	401; 403; MIL; OS; Legal Concl; F		
13:5-12	401; 403; MIL; OS; Legal Concl; F		
13:16-19	401; 403; MIL; OS; Legal Concl; F		
96:5-7	401; 403; MIL; OS		
96:10	401; 403; MIL; OS		
96:12-17	401; 403; MIL; OS		
96:20-22	401; 403; MIL; OS		

EXHIBIT B

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designation of Marcos Tzannes – September 10 and 11, 2018				
Designations	Objections(s)	Ruling	Counter Designations	Objections to Counters
9:6-19				
11:12-18				
20:11-22:4				
25:20-26:7				
31:19-33:4				
36:4-37:9	OS			
40:7-41:10				
49:2-9	OS			
49:16-50:15	OS			
50:19-51:2				
51:22-52:12	OS			
55:18-56:10	OS			
57:4-18				
59:14-62:21	OS			
63:11-64:19	OS, 401/402, 403			
67:6-14	OS			
68:14-19				
70:16-72:5	OS, 401/402, 403			
73:14-77:6	OS		77:7-17	401/402, 403
77:18-79:10	OS			
79:18-24				
81:17-82:1				
86:22-23			86:18-21, 86:24-87:5	Improper Counter, 401/402, 403, 802
87:8-12			87:13-88:25	Improper Counter, 401/402, 403, 802

2Wire's Deposition Designation of Marcos Tzannes – September 10 and 11, 2018				
Designations	Objections(s)	Ruling	Counter Designations	Objections to Counters
89:6-90:14			90:15-24	401/402, 403
91:21-92:5				
92:12-14				
94:12-15				
104:2-22				
150:2-9				
150:17-151:19				
153:18-154:3				
154:18-25	OS			
156:2-4			155:10, 155:14 – 156:7, 156:10 – 157:9	Improper Counter, 401/402, 403, 802
160:4-22				
161:2-9			161:10-16	401/402, 403
162:6-18			161:17 – 162:5	Improper counter, 401/402, 403
164:9-17				
249:16-250:1			248:19 – 249:15	
250:11-251:5			250:2-10	
251:10-22	OS		251:23 – 252:2	401/402, 403
252:3-11	OS			
253:17-255:17	OS			
264:1-10				
274:5-12				
280:2-25	401/402, 403			
294:11-20	OS		294:21 – 295:4	401/402, 403, 802
295:5-15	OS		295:16 – 295:23	401/402, 403, 802
295:24-296:8	OS		296:9 – 296:19	401/402, 403, 802
296:20-298:1	OS		298:5-9, 298:12 – 298:21	401/402, 403, 802
304:4-14	OS		303:7-303:2	401/402, 403, OS

2Wire's Deposition Designation of Marcos Tzannes – September 10 and 11, 2018				
Designations	Objections(s)	Ruling	Counter Designations	Objections to Counters
404:13-406:7	OS			

EXHIBIT C

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designations of [REDACTED]						
Designations	TQ Delta's Objections(s)	Ruling	TQ Delta's Counter-Designations	2Wire's Objections	Ruling	2Wire's Reply Designations
11:1-4						
11:10-12:11						
12:12-13:3			13:4			
17:22-20:24						
21:4-22:11			22:6-12	401/402, 403		
25:24-26:11			26:12-23, 27:16-28:1	401, 402, 403, 802, 901		28:2-7
34:11-12			34:2-3			
49:19-22			50:17-50	Incomplete Designation, 401, 402, 403, 802, 901		51:1-4
51:6-18						
73:24-74:5						
74:12-75:6						
75:10-19						
99:22-25						
100:4-10			95:4-9, 97:20-98:9, 100:12-101:11	Improper Counter-Designation 401, 402, 403, 802, 901, F, OS		
110:12-111:2	401					
118:9-119:19			306:21-307:1, 298:1-304:25, 127:18-128:2	Improper Counter, 401/402, 403, 802, OS,		

2Wire's Deposition Designations of [REDACTED]						
Designations	TQ Delta's Objections(s)	Ruling	TQ Delta's Counter-Designations	2Wire's Objections	Ruling	2Wire's Reply Designations
120:11-121:10			306:21-307:1, 298:1-304:25, 127:18-128:2			
124:11-127:2			306:21-307:1, 298:1-304:25, 127:18-128:2	Improper Counter-Designation, 401, 402, 403, 802, 901, F		
131:25-132:24			132:25-134:8	401, 402, 403		
134:9-136:13						
136:15-24						
137:2-11						
137:15-138:9						
139:19-140:15						
140:17-24			141:22-25, 142:2-4	401, 402, 403		
			143:15-144:10	Improper Counter-Designation, 401, 402, 403, 802, 901, F		
146:24-147:9	401					
171:3-16	401, 402, 403					
171:18-172:13	401, 402, 403					
172:15-25	401, 402, 403					
173:8-20	401, 402, 403					
174:3-13	401, 402, 403					
184:1-21	401, 402, 403					
201:11-202:1	401, 402, 403		198:10-11; 198:13-199:15	Improper Counter-Designation,		199:15-17; 199:19-200:13

2Wire's Deposition Designations of [REDACTED]						
Designations	TQ Delta's Objections(s)	Ruling	TQ Delta's Counter-Designations	2Wire's Objections	Ruling	2Wire's Reply Designations
				401, 402, 403, 802, 901, F		
219:12-15			219:7-9			
219:18-20						
220:9-221:3						
221:5-11						
221:13-222:10						
222:12-223:4						
223:6-25						
225:24-226:3						
226:6-12						
226:15-227:9						
242:11-243:15						
283:11-15						
285:20-286:3						
312:3-5	401, 402, 403					
312:7-12	401, 402, 403					
312:14-314:16	401, 402, 403		306:21-307:1, 298:1-304:25, 127:18-128:2	Incomplete Counter-Designation, Improper Counter-Designation, 401, 402, 403, 802, 901, F		
			306:21-307:1	Improper Counter-Designation,		

2Wire's Deposition Designations of [REDACTED]						
Designations	TQ Delta's Objections(s)	Ruling	TQ Delta's Counter-Designations	2Wire's Objections	Ruling	2Wire's Reply Designations
				401, 402, 403, 901, F		
317:22-25	F					
318:2-319:1			322:16-20	Improper Counter-Designation, 401, 402, 403		
325:9-326:13	F					
412:22-24	Relevance 401, 402					
413:1-8	Relevance 401,402					
424:25-425:1	702					
425:3-15	702					
425:17-426:21	702					
426:23-427:8	702					
427:10-16	702, foundation, form leading		427:17	401, 402, 403, NE		
427:18-428:5			428:6-12;			
			428:17-18;			428:14-15
			428:20-25.			428:1-430:2
428:6-430:2			431:12-436:6	401/402, 403, Improper counter,		437:7-14
430:3-9	401, 402, 403					
430:11-431:11	401, 402, 403					
435:1-3						
435:5-436:2	401, 402, 403, 702					

2Wire's Deposition Designations of [REDACTED]						
Designations	TQ Delta's Objections(s)	Ruling	TQ Delta's Counter-Designations	2Wire's Objections	Ruling	2Wire's Reply Designations
436:4-8						
436:10-18						
436:20-437:5	802, F		34:2:3	Improper Counter-Designation, 401/402, 403		
437:7-8	802, F		34:2-3	Improper Counter-Designation, 401/402, 403		

EXHIBIT D

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designations of Christopher W. Cahill - 11-29-17					
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters	Reply Designations
6:21-7:4					
9:15-22					
17:24-18:15					
18:22-19:13					
22:9-22					
23:8-24:25			24:25 – 25:4	401/402, 403	
25:12-15					
26:3-6					
26:23-27:9					
30:22-24					
31:15-25					
35:2-12					
51:21-52:8	401-402, 403				
53:14-54:4			54:5-8		
56:11-21	401-402, 403				
58:24-59:17	401-402, 403, Foundation				
61:19-25					
62:15-63:13	401-402, 403				
63:20-64:12	401-402, 403				
78:21-79:14			77:11 – 78:20	401/402, 403, F	
91:18-93:15	Foundation		93:16 – 94:2	401/402, 403, F	
94:8-20	Foundation		93:16 – 94:2	401/402, 403, F	
99:13-18	401-402, 403				

EXHIBIT E

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designation of Edmund Reiter 1-30-18				
Designations	Objections(s)	Ruling	Counter Designations	Objection(s) to Counter Designations
6:19-25				
17:5-8				
20:2-22:19				
24:20-23				
32:1-5			32:6-17	401/402, 403
32:18-34:1			34:2-14	Improper Counter; 401/402, 403
34:17-36:3			36:4-18	
40:17-41:2	401/402, 403			
82:8-24	401/402, 403		82:25 – 83:2	Improper Counter; 401/402, 403, F
83:3-16	401/402, 403		83:17 – 84:13	Improper Counter; 401/402, 403, F
84:14-84:13	401/402, 403			
86:10-17	401/402, 403			
87:11-22	401/402, 403			
89:2-90:12	401/402, 403		90:13 – 91:4	401/402
91:5-25	401/402, 403		92:1-7	Improper Counter; 401/402, 403, F
93:8-20	401/402, 403			
94:11-96:17	401/402, 403			
98:2-100:23	401/402, 403			
102:6-19	401/402, 403			
109:19-112:9	401/402, 403		109:6-18	Improper Counter; 401/402, 403
128:10-129:5			129:6-18	401/402, F
129:19-130:7				

2Wire's Deposition Designation of Edmund Reiter 1-30-18				
Designations	Objections(s)	Ruling	Counter Designations	Objection(s) to Counter Designations
130:15-132:23				
133:8-134:12			134:15-23	
134:24-135:16			135:16 – 135:17	
136:18-137:10				
145:3-9	401/402, 403			
146:21-147:3				
150:5-25				

EXHIBIT F

2Wire's Preliminary Deposition Designations – Family 2

2Wire's Deposition Designation of Mark Roche 9-12-2018 and 12-4-2018				
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters
8:2-4				
8:14-9:2				
9:17-10:5			12:17-22	401/402, 403
10:12-11:10			11:11-12:1	401/402, 403
13:9-16:23				
18:24-19:23			20:10-23; 21: 3-5	401/402, 403
27:6-17	MIL, 401/402, 403		22:3-21; 23:13-21	401/402, 403, improper counter
28:12-16	MIL, 401/402, 403			
29:8-16	MIL, 401/402, 403			
29:24-30:15	MIL, 401/402, 403			
30:23-31:4	MIL, 401/402, 403; remove objs			
33:16-22	MIL, 401/402, 403			
34:6-35:14	MIL, 401/402, 403		35: 15-18	401/402, 403, improper counter
45:13-46:3	401/402; 403 (remove obj)			
51:23-52:6	MIL, 401/402, 403			
52:22-24	MIL, 401/402, 403			
54:20-55:14	MIL, 401/402, 403			
59:5-21	MIL, 401/402, 403			
68:20-70:3	MIL, 401/402, 403			
111:7-11				
119:2-121:5	MIL, 401/402, 403		121:6-17; 187-188:19	401/402, 403, Improper counter
237:15-238:1				
242:7-243:7	401/402; 403			

2Wire's Deposition Designation of Mark Roche 9-12-2018 and 12-4-2018				
Designations	Objections(s)	Ruling	Counter-Designations	Objections to Counters
245:1-6	401/401; 403			

EXHIBIT G

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designation of Kevin Russell 4-17-2018					
Designations	Objections(s)	Ruling	Counter Designations	Objection(s) to Counters	Reply Designations
6:18-7:17					
8:24-9:6					
13:23-14:3					
15:24-16:8					
17:13-18:20	Foundation				
20:10-22:10	401-402, 403				
23:17-27:8	401-402, 403		27:9-15	401/402, 403	
27:25-28:19	401-402, 403, Foundation				
35:22-36:10					
39:1-18					
67:3-68:14	401-402, 403, Foundation				
127:10-129:18	401-402, 403, Foundation				
129:21-133:22	401-402, 403, Foundation				
133:25-139:6	401-402, 403, Foundation				
139:9-142:21	401-402, 403, Foundation				
142:24-145:17	401-402, 403				
149:3-153:14	401-402, 403, Foundation				
153:17-154:16	401-402, 403, Foundation				
169:5-17	401-402, 403				

2Wire's Deposition Designation of Kevin Russell 4-17-2018					
Designations	Objections(s)	Ruling	Counter Designations	Objection(s) to Counters	Reply Designations
170:1-11	401-402, 403				
171:22-174:12	401-402, 403, Foundation				
174:19-176:9	401-402, 403, Foundation				
176:12-178:3	401-402, 403, Foundation				
178:8-25	401-402, 403, Foundation				
180:3-182:11	401-402, 403				

EXHIBIT H

2Wire's Preliminary Deposition Designations

2Wire's Deposition Designations of Michael Tzannes 9-11-18 & 12-4-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objections(s) to TQ Delta's Counter-Designations
8:8-22				
23:9-24:11				
40:13-41:3	401-403			
47:13-25				
59:4-60:3				
62:12-64:20	401-403			
66:24-67:12				
68:11-69:7	401-403		66:16-23	Improper Counter, 401/402, 403
72:8-77:5	401-403		69:12 – 70:7	Improper Counter, 401/402, 403
79:1-80:13	401-403			
82:7-83:3	401-403			
84:19-86:25	401-403			
89:13-90:8				
97:10-12				
107:4-108:8	401-403		102:1 – 103:9	401/402, 403, Improper Counter
137:5-138:21				
141:3-143:5	401-403			
144:5-145:13	401-403			
146:12-23	401-403			
221:4-222:2	401-403			
225:20-226:21	401-403			
406:12-409:2	401-403		409:3 – 410:11	Improper Counter; 401/402, 403

2Wire's Deposition Designations of Michael Tzannes 9-11-18 & 12-4-18				
Designations	Objections(s)	Ruling	Counter-Designations	Objections(s) to TQ Delta's Counter- Designations
411:21-413:22	401-403			

EXHIBIT I

2Wire's Preliminary Deposition Designations

[illegible]

EXHIBIT 10

(TQ Delta MIL No. 1)

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

PLAINTIFF TQ DELTA’S MOTIONS *IN LIMINE* No. 1 FOR FAMILY 2 TRIAL

TQ Delta hereby submits the attached motion *in limine* to exclude disparaging and prejudicial comments about TQ Delta, TQ Delta’s business model or practices, regarding TQ Delta’s corporate structure, size, wealth, overall revenues, or number of employees, or relating to other litigations, litigation funding, investors, or TQ Delta’s parent or related companies.

Plaintiff's Motion in *Limine* No. 1: TQ Delta moves *in limine* pursuant to FRE 401, 402, and 403 to preclude 2Wire from offering argument, evidence, or testimony disparaging TQ Delta's business model or practices, regarding TQ Delta's corporate structure, size, wealth, overall revenues, or number of employees, or relating to other litigations, litigation funding, investors, or TQ Delta's parent or related companies.

References to TQ Delta as a "patent troll," "non-practicing entity" and the like should be precluded as irrelevant and unduly prejudicial. Such terms have no bearing on 2Wire's infringement of TQ Delta's '881 patent or its validity. This Court has granted similar motions *in limine*. As one example, in *Intellectual Ventures LLC v. Xilinx, Inc.*, this Court stated:

There will be no reference to IV as a patent troll. There will be no other pejorative terms referring to IV or its business model and they will not be reference to IV litigation or license activity unrelated to the patent in suit. . . [t]here is no relevance to pejorative terms or any effort to denigrate either side's business practices including IV or no relevance to whatever impact on the economy or on innovation there may be from IV's business practice.

D.I. 622-1 (Transcript of Pretrial Conference) in Case No. 10-CV-1065-LPS (D. Del. Apr. 25, 2014), at p. 5 of 24. In *Xilinx*, this Court rightly noted that "to the extent there is any relevance, it is far outweighed by the risk of unfair prejudice and the likelihood of this trial devolving from what it should be, which is to focus on the infringement, the validity and the damages issues to a sideshow about I suppose current issues in patent litigation, patent reform." *Id.*; *see also Interdigital Communications Inc. v. Nokia Corp.*, No. 13-CV-00010-RGA, D.I. 339, at p. 2 (D. Del. Aug. 28, 2014); *Intellectual Ventures I LLC v. Symantec Corp.*, No. 10-CV-1067-LPS, D.I. 615, at p. 1 (D. Del. Jan. 6, 2015); *Personalized User Model, L.L.P., v. Google Inc.*, No. 09-CV-525-LPS, D.I. 606, at pp. 6-7 (D. Del. Feb. 27, 2014); *British Telecommunications PLC v. Google Inc.*, No. 11-CV-1249-LPS, D.I. 382, at pp.1-2 (D. Del. Jan. 23, 2014).

In related litigation, this Court warned against the use of disparaging remarks:

THE COURT: . . . ad hominem sorts of things don't really go too far, and so calling the other side a patent troll and calling the U.K. Court a troll friendly Court, that's not going to help you win. All right?

* * *

. . . that's the kind of thing that you counsel your out-of-town-counsel not to say.

TQ Delta, LLC v. Zyxel Communications, Inc., No. 13-CV-02013-RGA, D.I. 458, at 3:25-4:15 (D. Del. Dec. 19, 2017). It follows that 2Wire be precluded from using such terms as well.

This Court should also preclude any reference to TQ Delta's size, wealth, number of employees or overall revenue, as irrelevant to the issues in this case and unfairly prejudicial to TQ Delta. Recently, this Court granted-in-part a plaintiff's motion in *limine* to exclude evidence of the parties' size, wealth, and overall revenue stating that "[the defendant] is not permitted to denigrate Plaintiffs by painting a 'David and Goliath' scenario or [by] inflammatory terms characteriz[ing] Plaintiffs' size." *Alarm.com, Inc. v. Securenets Tech. LLC*, No. 15-cv-00807-RGA, D.I. 242 (D. Del. Jan. 23, 2019); *see also HTC Corp. v. Tech. Properties Ltd.*, No. 5:08-CV-00882, 2013 WL 4782598, at *6 (N.D. Cal. Sept. 6, 2013) ("the probative value of evidence related to . . . size, wealth, or overall revenues is substantially outweighed by the risk of unfair prejudice"). Similarly, TQ Delta's investors and litigation funding are irrelevant and would only to confuse the jury. *See Mondis Tech. Ltd. v. LG Elecs. Inc.*, No. 15-cv-04431, D.I. 429-1 (D.N.J. March 25, 2019) ("[Defendant] is precluded from referring to the investors or ownership of [plaintiff] or its parent company. . ."). Nor does TQ Delta's corporate relationship with other entities have any bearing on any issue in this case.

Just as irrelevant and prejudicial is evidence that TQ Delta has not commercialized the asserted patent. Infringement "is determined by comparing an accused product not with . . . a commercialized embodiment. . . but with the . . . claims." *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985). Argument and evidence that TQ Delta, or the prior patent owners, has not commercialized a product embodying the patents or that TQ Delta should

recover less because of a lack of commercialization, will confuse or mislead the jury into thinking that such efforts are required for the patents to be valid and infringed. *See Mondis*, No. 15-cv-04431, D.I. 429-1 (“[defendant]. . . may not argue that there is something wrong with [a licensing] business model or [plaintiff] because it does not make a product.”). Likewise, testimony about the circumstances surrounding the purchase of the patents by TQ Delta and the purchase price is not relevant, and is likely to cause confusion about damages. Notably, TQ Delta would not have been a party to the hypothetical negotiation—so its business details have no bearing whatsoever on any issue in this case.

Finally, with the exception of certain licenses, arguments and evidence that TQ Delta has asserted other patents in other cases should be precluded as irrelevant and as distracting and misleading to the jury. *See British Telecommunications*, No. 11-1249-LPS (D. Del. Jan. 23, 2014), D.I. 382 (excluding evidence of other litigation); *ICU Med., Inc. v. RyMed Techs., Inc.*, 752 F. Supp. 2d 486, 490 (D. Del. 2010); *Cordis Corp. v. Medtronic Vascular, Inc.*, No. 97-550-SLR, 2005 WL 885381, at *5 (D. Del. Feb. 28, 2005) (precluding reference to “any prior proceedings, trials, verdicts, judgments, decisions, or rulings”). This Court has instructed that evidence of prior lawsuits is “generally inadmissible.” *See Johns Hopkins Univ. v. Alcon Labs. Inc.*, No. 15-CV-525, 2018 WL 4178159, at *21 (D. Del. Aug. 30, 2018); *Alarm.com*, No. 15-CV-00807-RGA, D.I. 242 (precluding reference to prior litigation); *Sonos, Inc. v. D&M Holdings Inc.*, No. 14-CV-1330-WCB, 2017 WL 5633204, at *1 (D. Del. Nov. 21, 2017) (same).

TQ Delta will limit its trial presentation to the merits of the case, presenting itself as a patent owner alleging infringement of valid patents to protect its intellectual property rights. 2Wire should likewise limit its trial presentation to the merits, and should be prohibited from using argument, evidence, or testimony characterizing TQ Delta or its business model.

Dated: April 1, 2019

Respectfully submitted,
FARNAN LLP

/s/ James P. Murphy

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

**2WIRE, INC.'S OPPOSITION TO TQ DELTA LLC'S
MOTION *IN LIMINE* NO. 1 FOR FAMILY 2**

I. INTRODUCTION

TQ Delta's Motion *in Limine* No. 1 for Family 2 is effectively four separate motions. It seeks to preclude 2Wire from referencing at trial: (1) TQ Delta as a patent troll, non-practicing entity, and the like; (2) TQ Delta's size, wealth, number of employees, or overall revenue; (3) the fact that TQ Delta has not commercialized the asserted patent; and (4) the fact that "with the exception of certain licenses, arguments and evidence that TQ Delta has asserted other patents in cases." *See generally*, TQ Delta's Motion *in Limine* No. 1. As an initial matter, 2Wire has no intention of (1) referring to TQ Delta as a "patent troll" or using other pejorative terms to refer to TQ Delta during trial, or (4) referring to the fact that TQ Delta has or is asserting patents that are not asserted against 2Wire in other litigations. These aspects of TQ Delta's motion should be denied as moot. However, TQ Delta's Motion *in Limine* No. 1 goes too far by seeking to preclude introduction of relevant and objective facts about the nature of TQ Delta and its business.

II. ARGUMENT

TQ Delta cannot present itself to the jury in a vacuum.

As an initial matter, the jury entitled to know that TQ Delta does not develop products, but instead is a licensing entity that does not practice the patents it seeks to license. *Personalized User Model, L.L.P. v. Google, Inc.*, No. 09--525, 2014 WL 807736, at *3 (D. Del. Feb. 27, 2014) (holding that defendant can present necessary background information). Indeed, courts have generally permitted defendants to reference such facts. *See also HTC Corp. v. Tech. Props. Ltd.*, No. 5:08-cv-00882, 2013 WL 4782598, at *4 (N.D. Cal. Sept. 6, 2013) (permitting HTC to use

neutral language to describe a licensing entity);¹ *Inventio AG v. Thyssenkrupp Corp.*, C.A. No. 08-874-RGA, D.I 612 (D. Del. Jan. 9, 2015) (Pretrial Hearing Tr.), at 42:24-43:5 (denying *in limine* motion as moot following defendant’s representation that it did not intend to refer to the plaintiff as a “patent troll” and not precluding defendant from referring to plaintiff as a non-practicing entity); *Digital Reg. of Texas, LLC v. Adobe Sys., Inc.*, No. C 12-1971 CW, 2014 WL 4090550, at *12 (N.D. Cal. Aug. 19, 2014) (“Adobe may, however, describe the nature of Digital Reg’s business with ***neutral, strictly factual terms***, such as . . . a ‘company that does not make anything,’ a ‘company that does not sell anything,’ or ‘licensing entity.’”) (emphasis added). Moreover, as one recent order found, not only could defendants refer to plaintiffs as a licensing enterprise, but they were also permitted to ask plaintiffs’ witness “what [the witness’] business [was] as general background and [to] inquire, without overemphasis, how [the witness’] business makes money, which [was] by licensing patents, and if people [did] not accept licenses, by initiating litigation[.]” *Mondis Technology Ltd. et al v. LG Electronics Inc., et al.*, C.A. No. 2:15-cv-04431-SRC-CLW, D.I. 432 (D.N.J. Mar. 26, 2019) (Order Regarding the Parties’ *Motions In Limine*), at ¶ 7. These decisions demonstrate that true and correct descriptions of the licensing entity business model are admissible. Likewise, they are accurate when applied to TQ Delta, and may therefore be used at trial by 2Wire.

Moreover, the nature of TQ Delta’s business, including its business tactics and the size of the company—which demonstrate that TQ Delta is in fact a licensing entity—is plainly relevant

¹ The *HTC* court also granted a motion *in limine* seeking to exclude testimony or evidence related to HTC’s size, wealth, or overall revenue. *HTC Corp.*, 2013 WL 4782598, at *6. However court specifically noted that that the size or revenue of a company could not be used “***as a check to confirm the reasonableness of a jury award***”, *id.*(emphasis added), which is not at issue in TQ Delta’s Motion *in Limine* No. 1 or in this trial.

at least to rebutting TQ Delta's arguments regarding the commercial success of the asserted Family 2 patent. *See Personalized User Model*, 2014 WL 807736, at *3.²

Finally, TQ Delta identifies no basis for precluding the fact that it has not commercialized the asserted patent. This is relevant at least to rebutting TQ Delta's secondary indicia of non-obviousness, including any evidence on commercial success. *See Personalized User Model*, 2014 WL 807736, at *3 (holding that where patentee relied on accused infringer's commercial success as an indicia of non-obviousness, the accused infringer could rely on the patentee's lack of commercial success). In its brief, TQ Delta cites to *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985), which does not address the issue raised in TQ Delta's Motion *in Limine* No. 1. TQ Delta has identified no basis for excluding this relevant and undisputed fact of the nature of its business.

III. CONCLUSION

For the reasons set forth above, TQ Delta respectfully requests this Court deny TQ Delta's Motion *in Limine* No. 1 to the extent that it seeks to preclude 2Wire from using appropriate and neutral descriptions of TQ Delta's business.

² TQ Delta's business model is also relevant at least as to damages and determining a reasonable royalty, which are to be decided in later stages of this litigation. *See, e.g., Digital Reg of Texas*, 2014 WL 4090550, at *12 ("Digital Reg's status as a non-practicing entity is relevant to damages."); *Inventio AG*, C.A. No. 08-874-RGA, D.I 612, at 42:13-17 (court stating "[a]nd at some point along the lines, there will probably be some testimony about the fact that you are, what I believe, a patent holding subsidiary of [a company] and that may be relevant to reasonably royalty damages"); *Intellectual Ventures I LLC v. Symantec Corp.*, No. CV10-1067-LPS, 2015 WL 82052, at *1 (D. Del. Jan. 6, 2015) (permitting defendant "to present argument and evidence that [plaintiff] does not practice the patents-in-suit, which is relevant to damages").

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

**PLAINTIFF TQ DELTA’S REPLY IN SUPPORT OF ITS MOTION *IN LIMINE*
No. 1 FOR FAMILY 2 TRIAL**

TQ Delta hereby submits the attached Reply Brief in support of its motion *in limine* to exclude disparaging and prejudicial comments about TQ Delta, TQ Delta’s business model or practices, regarding TQ Delta’s corporate structure, size, wealth, overall revenues, or number of employees, or relating to other litigations, litigation funding, investors, or TQ Delta’s parent or related companies.

Plaintiff's Reply in Support of its Motion in *Limine* No. 1: As an initial matter, 2Wire agrees (A) not to refer to TQ Delta as a “patent troll” or by any other pejorative terms; and (B) not to refer to the fact that TQ Delta has or is asserting other patents in other litigations.

2Wire, however, argues that “the jury is entitled to know that TQ Delta does not develop products, but instead is a licensing entity that does not practice the patents it seeks to license.” But those matters have no relevance where the only issues in this trial are infringement and validity.¹ 2Wire’s cited case law is distinguishable because damages were an issue in those cases.² 2Wire’s own cited case law states that a “[defendant]. . . may not argue that there is something wrong with [a licensing] business model or [plaintiff] because it does not make a product.” *Mondis Tech. v. LG Elecs. Inc.*, No. 15-cv-04431, D.I. 429-1 (D.N.J. March 25, 2019).

Further, 2Wire’s argument that TQ Delta’s business tactics and size are allegedly relevant to rebutting commercial success fails because TQ Delta has never asserted that it attempted to commercialize the ‘881 patent. *See PUM*, 2014 WL 807736, at *3 (defendant may rebut commercial success with “[e]vidence showing that [plaintiffs] were not successful at the time they owned the patents-in-suit”). 2Wire has also failed to demonstrate that TQ Delta’s size, wealth, number of employees, overall revenue, or lack of commercialization of the ‘881 patent are relevant to infringement or validity. TQ Delta’s motion in *limine* should be granted.

¹ 2Wire’s argument that TQ Delta’s business model is relevant to damages is moot. D.I. 1043.

² In *Digital Reg. of Texas v. Adobe Sys.*, No. 12-CV-1971, 2014 WL 4090550 (N.D. Cal. Aug. 19, 2014), the court allowed the defendant to refer to the plaintiff’s business with “neutral, strictly factual terms,” because it was “relevant to damages and the *Georgia-Pacific* factors.” *Id.* at *12 (citing *HTC Corp. v. Tech. Prop. Ltd.*, 08-CV-00882, 2013 WL 4782598, at *3-*4 (N.D. Cal. Sept. 6, 2013) (also cited by 2Wire)). In *PUM v. Google*, No. 09-CV-525, 2014 WL 807736, at *3 (D. Del. Feb. 27, 2014), the Court allowed the defendant to introduce “necessary background information,” out of fairness because the plaintiff had already committed to introducing such information. Moreover, 2Wire even acknowledges that, in *HTC Corp.*, the defendant was precluded from referencing the plaintiff’s size, wealth or overall revenues, the court stating that “the probative value. . . is substantially outweighed by the risk of unfair prejudice, confusion of the issues and misleading the jury.” 2013 WL 4782598, at *6.

Dated: April 10, 2019

Respectfully submitted,
FARNAN LLP

/s/ James P. Murphy

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT 11

(TQ Delta MIL No. 2)

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

PLAINTIFF TQ DELTA'S MOTIONS *IN LIMINE* No. 2 FOR FAMILY 2 TRIAL

TQ Delta hereby submits the attached motion *in limine* to preclude 2Wire from presenting evidence or argument on invalidity theories, prior art references, or background references that were not relied upon by its expert, Dr. Jacobsen, in her expert reports.

Plaintiff's Motion in *Limine* No. 2: TQ Delta moves *in limine* pursuant to FRE 401, 402, and 403 to preclude 2Wire from presenting evidence or argument on invalidity theories that its expert, Dr. Krista Jacobsen, did not explicitly disclose in her expert reports. To prevent unfair surprise, 2Wire and Dr. Jacobsen should be restricted to using the prior art discussed in Dr. Jacobsen's reports, and only for the purpose for which it was disclosed. For example, if Dr. Jacobsen only discusses a reference a background, it should only be used at trial for background and not as a basis for an anticipation or obviousness theory.

On March 29, 2019, 2Wire submitted a Notice pursuant to 35 U.S.C. § 282 (Exhibit 1 attached hereto), including numerous references that were not relied upon by Dr. Jacobsen in her expert reports. *See* Exhibit 2 attached hereto. 2Wire filed its Section 282 Notice only 30 days before trial is set to begin, nearly 6 months after the close of fact discovery, and nearly 5 months after providing its opening expert report on invalidity. *See* D.I. 513. Notably, 2Wire's Notice does not even disclose whether it intends to use the listed prior art references for purposes of arguing invalidity or as background references. Regardless, 2Wire should be precluded from introducing these references, or any other references, that Dr. Jacobsen did not opine on in her expert reports because 2Wire's eleventh-hour disclosure (1) would circumvent this Court's Scheduling Order and Rule 26 expert disclosures, and (2) is unduly prejudicial to TQ Delta.

Section 282 of the Patent Act provides, in relevant part:

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial. . . of any publication to be relied upon as anticipation of the patent in suit or. . . as showing the state of the art.

35 U.S.C. § 282.

In *ATD Corp. v. Lydall, Inc.*, the Federal Circuit made clear that Section 282 does not trump the Federal Rules of Civil Procedure or the Court's Scheduling Order:

[W]hen the court has set and the parties have agreed to a discovery period, that procedure necessarily governs that trial. Thus, although §282 sets a minimum period for the identification of prior art to be introduced as evidence of anticipation, a specific judicial directive for the timing of discovery establishes the procedures to which the parties are bound.

159 F.3d 534, 550-551 (Fed. Cir. 1998). The Federal Circuit explained that the purpose of Section 282, like the Federal Rules of Civil Procedure, is to prevent unfair and prejudicial surprise, “not to facilitate last-minute product of evidence.” *Id.*

In *Innogenetics, N.V. v. Abbott Labs.*, the Federal Circuit addressed an abuse of Section 282, affirming the exclusion of allegedly anticipatory prior art disclosed on the last day of discovery:

This case aptly demonstrates the pitfalls of playing fast and loose with rules of discovery. Conclusory expert reports, eleventh hour disclosures, and attempts to proffer expert testimony without compliance with Rule 26 violate both the rules and principles of discovery, and the obligations lawyers have to the court. Exclusion and forfeiture are appropriate consequences to avoid repeated occurrences of such manipulation of the litigation process.

512 F.3d 1363, 1376, n. 4 (Fed. Cir. 2008). Section 282 is not a substitute for a party’s compliance with the Federal Rules of Civil Procedure. Just like the alleged infringer in *ATD* and *Innogenetics*, 2Wire should not be allowed to use its Section 282 Notice to sneak in invalidity defenses that were not properly disclosed pursuant to the Federal Rules of Civil Procedure and this Court’s Scheduling Order.

TQ Delta is concerned that 2Wire will use its Section 282 Notice as a backdoor attempt to include previously undisclosed anticipation grounds. This is particularly problematic considering that the parties agreed, on February 13, 2019, that 2Wire would limit the prior art used for §102 or §103 purposes to the references cited for that purpose by Dr. Jacobsen in her expert report on invalidity. *See* Exhibit 3 (February 13, 2019 Email from Brett Schuman to Peter McAndrews). Dr. Jacobsen testified that her opening and reply reports on invalidity and her rebuttal report on infringement constitute all of her opinions regarding Family 2. *See* D.I. 743-6

(Jacobsen Dep. Tr. Feb. 5, 2019) at 205:6-206:3. Notably, the Section 282 Notice contains many references that not only were not relied on by Dr. Jacobsen for her invalidity opinions, but also were not even cited in the “Background of the Technology” section of her expert reports. At most, many of these references were only listed in Appendix B, “Materials Considered.” Since Dr. Jacobsen did not rely on these references in her grounds for invalidity or as background information, 2Wire should be precluded from introducing them, or any others, at trial.

This Court should preclude 2Wire’s belated attempt to include additional prior art references, as this would be unduly prejudicial to TQ Delta. By surprising TQ Delta with references that were not previously relied on in its expert reports, 2Wire places an impossible burden on TQ Delta and on the Court. TQ Delta and its experts would be required to analyze each of these references, and the numerous possible combinations, and do so without any explanation from 2Wire as to how the references allegedly suggest invalidity of the patent-in-suit. Even if 2Wire only intends to use the references as background information, the same problem results because TQ Delta had no notice of 2Wire position or Dr. Jacobsen’s opinion on these references, and still has no notice regarding how such references are to be used. Thus, TQ Delta has no way of preparing to challenge these references at trial.

TQ Delta respectfully requests that 2Wire be precluded from (1) introducing invalidity theories that were not explicitly disclosed in Dr. Jacobsen’s expert reports, (2) relying on background references for any purpose other than that explicitly disclosed by Dr. Jacobsen, and (3) relying on any prior art references that Dr. Jacobsen did not rely on in her expert reports.

Dated: April 1, 2019

Respectfully submitted,
FARNAN LLP

/s/ *James P. Murphy*

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT 1

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	
)	
v.)	
)	C.A. No. 13-cv-1835-RGA
2WIRE, INC.,)	
)	
Defendant.)	
)	

2WIRE, INC.'S NOTICE PURSUANT TO 35 U.S.C. § 282

Defendant 2Wire, Inc. ("2Wire"), through its undersigned attorneys, makes the following disclosures pursuant to § 282 of Title 35 of the United States Code. 2Wire reserves the right to supplement these disclosures before or during trial consistent with the evidence presented, any new evidence, and 2Wire's trial exhibit list. In addition to the materials below, 2Wire may rely upon any material considered or relied upon by any expert or mentioned in any expert report, appendix, materials considered section or deposition; any material referred to in any written discovery response or Rule 26 disclosure; any material discussed by any witness in any deposition in this case; any exhibit used at any deposition in this case; any exhibit listed on any trial exhibit list or amended trial exhibit list; any material listed in the parties' proposed final pretrial order or any exhibit attached therein; or any other material produced or disclosed that Plaintiff TQ Delta, LLC could reasonably consider may be relied upon by 2Wire.

2Wire previously disclosed to Plaintiff the identity of certain patents and publications within the scope of § 282 through invalidity contentions, pleadings, interrogatory responses, expert reports, and deposition testimony. To the extent not listed below, 2Wire incorporates by reference these previously-disclosed patents and publications. 2Wire also incorporates by

reference the prosecution histories of the patents identified below. To the extent not listed below, 2Wire also incorporates by reference each patent and publication listed on the face of U.S. Patent No. 7,453,881 (the “’881 patent”) and/or identified in the prosecution history of the ’881 patent.

2Wire may also rely on any persons who are identified in the Joint Final Pretrial Order as witnesses as being prior inventors or having prior knowledge of the invention or state of the art concerning the ’881 patent.

Defendants reserve the right to amend or supplement this Notice to the extent the trial date is changed or to correct any inadvertent omissions.

I. Section 282 Patents

2Wire may rely on the following patents and published patent applications at trial, pursuant to § 282:

Patent No.	Country	Date Issued or Published	Named Inventor(s)
6,222,858	U.S.	April 24, 2001	Raymond C. Counterman
6,956,872	U.S.	October 18, 2005	Igor Djokovic, Patrick Duvaut, Massimo Sorbara
WO 99/39468	PCT	August 5, 1999	Einar Edvardsen, Terje Edvard Ormhaug
7,068,657	U.S.	June 27, 2006	Stefan Keller-Tuberg

Patent No.	Country	Date Issued or Published	Named Inventor(s)
6,772,388	U.S.	August 3, 2004	Michael J. Cooper, Stephen Schroeder
5,617,417	U.S.	April 1, 1997	Shirish K. Sathe, Charles M. Corbalis, Uri Schmidt, Richard M. Moley
6,822,960	U.S.	November 23, 2004	Earl B. Manchester, Barry W. Field, Kenneth M. Buckland, Riccardo G. Dorbolo
6,178,448	U.S.	January 23, 2001	Janes P. Gray, James. J Martin
5,608,733	U.S.	March 4, 1997	Richard Vallee, John G. Ellis
6,680,954	U.S.	January 20, 2004	Richard Cam, Steven Lang, Charles Kevin Huscroft
6,205,142	U.S.	March 20, 2001	Richard Vallee
5,727,051	U.S.	March 10, 1998	Wlodek Holender

Patent No.	Country	Date Issued or Published	Named Inventor(s)
6,408,005	U.S.	June 18, 2002	Ruixue Fan, Brian L. Mark, Gopalakrishnan Ramamurthy
6,941,252	U.S.	September 6, 2005	Jeffrey J. Nelson, Robert Grant, Stephen Trevitt
6,775,268	U.S.	August 10, 2004	Ray Wang, Paul Y. B. Shieh
6,396,837	U.S.	May 28, 2002	Ray Wang, Paul Y. B. Shieh
6,747,964	U.S.	June 8, 2004	Paul Bender
6,002,670	U.S.	December 14, 1999	Reshad Rahman, Douglas H. Patriarche, Richard Vallee, Stuart C. White
7,343,543	U.S.	March 11, 2008	Ramesh Mantha, Jeffrey P. Castura, Frank M. Van Heeswyk
6,775,320	U.S.	August 10, 2004	Marcos C. Tzannes, Michael A. Tzannes, David C. Hunter, Richard W. Gross, Halil Padir

Patent No.	Country	Date Issued or Published	Named Inventor(s)
EP1009154 (A2)	Europe	June 14, 2000	Murali Aravamudan, Arun Narayan Netravali, Edward Stanley Szurkowski

II. Section 282 Publications

2Wire may rely on the following publications at trial, pursuant to § 282:

Publication Date	Publication Author and Title	Pages
July 1997	ATM Forum Technical Committee, Inverse Multiplexing over ATM (IMA) Specification Version 1.0 (AF-PHY-0086.000)	All
June 1999	ITU-T Recommendation G.992.1	All
August 2001	Broadband Forum Recommendation TR-042	All

Dated: March 29, 2019

/s/ Jody C. Barillare

Brett Schuman (*pro hac vice*)
Rachel M. Walsh (*pro hac vice*)
Monte M.F. Cooper (*pro hac vice*)
GOODWIN PROCTER LLP
Three Embarcadero Center, 24th Floor
San Francisco, California 94111
Telephone: 415.733.6000
bschuman@goodwinprocter.com
rwalsh@goodwinprocter.com
mcooper@goodwinlaw.com

Jody C. Barillare (#5107)
MORGAN LEWIS & BOCKIUS LLP
The Nemours Building
1007 North Orange Street, Suite 501
Wilmington, Delaware 19801
Telephone: 302.574.3000
jody.barillare@morganlewis.com

Attorneys for Defendant 2Wire, Inc.

EXHIBIT 2

**COMPARISON CHART: SECTION 282 REFERENCES CITED IN DR. JACOBSEN'S
EXPERT REPORTS**

Patent No.	Named Inventor(s)	Relied on by Dr. Jacobsen in her Expert Report
6,222,858	Counterman et al.	X
6,956,872	Djokovic et al.	X
WO 99/39468	Edvardsen et al.	X
7,068,657	Keller-Tuberg	X
6,772,388	Cooper et al.	X
5,617,417	Sathe et al.	
6,822,960	Manchester et al.	
6,178,448	Gray et al.	
5,608,733	Vallee et al.	
6,680,954	Cam et al	
6,205,142	Vallee	
5,727,051	Holender	
6,408,005	Fan et al.	
6,941,252	Nelson et al.	
6,775,268	Wang et al.	
6,396,837	Wang et al.	
6,747,964	Paul Bender	
6,002,670	Rahman et al.	
7,343,543	Mantha et al.	
6,775,320	Tzannes et al.	
EP1009154 (A2)	Aravamudan et al.	
AF-PHY-0086.000	Printed Pub.	X
ITU-T G.992.1	Printed Pub.	X
TR-042	Printed Pub.	X

EXHIBIT 3

From: BSchuman@goodwinlaw.com
Sent: Wednesday, February 13, 2019 5:02 PM
To: Peter McAndrews
Cc: TQD-DSL; DG-TQDelta-2Wire@goodwinlaw.com
Subject: RE: TQ Delta v. 2Wire - Family 2 Accused Products

Agreed, thanks.

Brett

From: Peter McAndrews [mailto:PMCANDREWS@mcandrews-ip.com]
Sent: Wednesday, February 13, 2019 2:41 PM
To: Schuman, Brett
Cc: TQD-DSL; DG-TQDelta-2Wire
Subject: RE: TQ Delta v. 2Wire - Family 2 Accused Products

Brett,

Happy to discuss, but let me see if we can short circuit this with the following proposal, which is like to what we agreed to for F1. Please let me know if we have agreement on the following. If not, I'm available to discuss tomorrow.

2Wire issues:

1. 2Wire products that use the [REDACTED] (Note: our identification of accused products for F2 never have included products that use the [REDACTED])

TQ Delta position: not being pursued at Family 2 trial against 2Wire.

TQ Delta issues:

1. 102/103 prior art not cited in Jacobsen invalidity reports

2Wire position: may be relied on as general background, in rebuttal to arguments or evidence introduced by TQ Delta, or on cross-examination, but will not be used as grounds for invalidity. In other words, we reserve the right to rely on prior art identified by 2Wire in discovery for any purpose except as an independent ground for invalidity.

TQ Delta position: we agree to 2Wire's position that 102/103 prior art not cited in Jacobsen invalidity reports will not be relied on for independent invalidity grounds. We reserve the right to seek to preclude reference to such prior art (e.g., by objection, motion, or otherwise).

2. 103 combinations/103 defenses not asserted in Jacobsen invalidity reports

2Wire position: not being pursued at Family 2 trial.

3. 102 defenses not asserted in Jacobsen invalidity reports

2Wire position: not being pursued at Family 2 trial.

4. 112 defenses

2Wire position: not waiving these defenses.

TQ Delta position: We reserve the right to seek to preclude any 112 defenses (e.g., by objection, motion, or otherwise).

Pete

From: BSchuman@goodwinlaw.com [mailto:BSchuman@goodwinlaw.com]
Sent: Wednesday, February 13, 2019 1:13 PM
To: Peter McAndrews
Subject: RE: TQ Delta v. 2Wire - Family 2 Accused Products

Pete, I'm just following up on this. Can we discuss?

Brett

From: Schuman, Brett
Sent: Monday, February 11, 2019 4:41 PM
To: 'Peter McAndrews'
Subject: FW: TQ Delta v. 2Wire - Family 2 Accused Products

Pete,

Can we get some clarity on this please? At his deposition last week in Boston, Dr. Putnam confirmed he is not offering any damages opinions on these products.

If there are F2-related issues you would like to discuss or clarify with 2Wire, I'm happy to discuss.

Brett

From: Walsh, Rachel M.
Sent: Thursday, February 07, 2019 4:27 PM
To: pmcandrews@mcandrews-ip.com; pwmcandrews@mcandrews-ip.com; TQD-DSL@mcandrews-ip.com
Cc: DG-TQDelta-2Wire; Michael J. Farnan; Brian Farnan; Barillare, Jody C.
Subject: TQ Delta v. 2Wire - Family 2 Accused Products

Pete,

Can you please confirm that TQ Delta is no longer accusing products that use the following chips of infringement for Family 2?



Regards,

Rachel

Rachel M. Walsh



Goodwin Procter LLP
3 Embarcadero Center
San Francisco, CA 94111

o +1 415 733 6128
f +1 415 384 6021

RWalsh@goodwinlaw.com | goodwinlaw.com

This message was sent from Goodwin Procter LLP and is intended only for the designated recipient(s). It may contain confidential or proprietary information and may be subject to the attorney-client privilege or other confidentiality protections. If you are not a designated recipient, you may not review, copy or distribute this message. If you receive this in error, please notify the sender by reply e-mail and delete this message. Thank you.

CONFIDENTIALITY NOTICE:

This Material is intended for the named recipient and, unless otherwise expressly indicated, is confidential and privileged information. Any dissemination, distribution or copying of this material is prohibited. If you received this message in error, please notify the sender by replying to this message and then delete it from your system. Your cooperation is appreciated.

**2WIRE’S OPPOSITION TO TQ DELTA’S
MOTION IN LIMINE NO. 2 REGARDING PRIOR ART REFERENCES**

The Court should deny TQ Delta’s Motion *in Limine* No. 2 regarding the prior art disclosed in 2Wire’s notice pursuant to 35 U.S.C. § 282. As required by § 282, on March 29, 2019 (30 days before the Family 2 trial), 2Wire provided TQ Delta with notice of “the country, number, date, and name of the patentee of any patent, [and] the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or . . . as showing the state of the art[.]” 35 U.S.C. § 282(c); TQ Delta Exhibit 1 (2Wire’s § 282 notice). Contrary to TQ Delta’s complaints, 2Wire’s compliance with the statutory requirements of § 282 does not violate the Court’s Final Scheduling Order or create any risk of unfair prejudice to TQ Delta at trial.

In its motion, TQ Delta seeks to preclude 2Wire from “(1) introducing invalidity theories that were not explicitly disclosed in Dr. Jacobsen’s expert reports, (2) relying on background references for any purpose other than that explicitly disclosed by Dr. Jacobsen, and (3) relying on any prior art references that Dr. Jacobsen did not rely on in her expert reports.” TQ Delta MIL No. 2, at p. 3. 2Wire addresses TQ Delta’s requested relief in turn below.

With respect to (1), 2Wire has already agreed—in writing—that it will not pursue at trial any anticipation or obviousness defenses not previously disclosed in Dr. Jacobsen’s invalidity expert reports. *See* TQ Delta Exhibit 3 (2/13/19 email from B. Schuman to P. McAndrews, noting 2Wire’s positions that “103 combinations/103 defenses not asserted in Jacobsen invalidity reports” and “102 defenses not asserted in Jacobsen invalidity reports” are “not being pursued at Family 2 trial”). Given this agreement, which TQ Delta acknowledges in its motion, it is unclear why TQ Delta is seeking to preclude 2Wire from pursuing previously undisclosed invalidity theories that it has already agreed not to pursue. TQ Delta’s request should be denied as moot.

As for (2) and (3), there is no basis in the law for TQ Delta’s requested relief, and the Court should reject TQ Delta’s requests. Section 282 requires, in part, that 2Wire disclose to TQ

Delta the patents and publications that it may rely upon at trial “as showing the state of the art[.]” 35 U.S.C. § 282(c). 2Wire’s § 282 notice did just that, by identifying the exact same prior art references disclosed long ago in each of 2Wire’s invalidity contentions for U.S. Patent No. 7,453,881 (the “’881 patent”) served on January 23, 2017 and July 2, 2018. *See* Walsh Decl., Ex. A (1/23/17 Invalidity Contentions), at pp. 22–24; Ex. B (7/2/18 Invalidity Contentions), at pp. 17–19. Despite this prior disclosure more than two years ago during discovery, TQ Delta still seeks a blanket order from the Court precluding 2Wire from relying on prior art at trial if Dr. Jacobsen did not expressly discuss such prior art in her expert reports.

The two cases TQ Delta cites do not support its position. In those cases, the defendants sought to introduce brand new invalidity theories through a § 282 notice served late in the case; the prior art references relied upon for those new invalidity theories were not previously disclosed during the discovery process. *See ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 551 (Fed. Cir. 1998) (“The district court in the instant case was well within its discretion in excluding the Munters patent, for the record shows that [defendant] offered no reason to justify its submission [through a § 282 notice] *long after the close of discovery.*”) (emphasis added); *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1376 (Fed. Cir. 2008) (“Abbott’s disclosure of the Cha patent [pursuant to § 282] as an anticipatory prior art reference *on the very last day of discovery* meant Innogenetics was stripped of any meaningful opportunity to prepare an adequate cross-examination of the reference.”) (emphasis added). The Federal Circuit affirmed the exclusion of the references at trial so as to prevent unfair prejudice and surprise.

The situation in *ATD* and *Innogenetics* does not exist here. First, given the disclosures in 2Wire’s invalidity contentions from January 2017 and July 2018, TQ Delta has known of the prior art references identified in 2Wire’s § 282 notice for over two years. This is not a last-

minute disclosure of prior art that TQ Delta has never seen before. Second, in contrast to *ATD* and *Innogenetics*, 2Wire is not attempting to introduce any new invalidity theories based on the prior art in its § 282 notice. As discussed above, 2Wire has already agreed not pursue any prior art invalidity theories not disclosed in Dr. Jacobsen's expert reports. Instead, any prior art outside of those relied upon by Dr. Jacobsen would be for the sole purpose of "showing the state of the art," as permitted by § 282. In sum, there is no risk of unfair prejudice or surprise to TQ Delta, and exclusion of the references cited in 2Wire's § 282 notice is unwarranted.

Accordingly, for the reasons discussed above, 2Wire respectfully requests that the Court deny TQ Delta's Motion *in Limine* No. 2.

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

**PLAINTIFF TQ DELTA'S REPLY IN SUPPORT OF ITS MOTION *IN LIMINE*
No. 2 FOR FAMILY 2 TRIAL**

TQ Delta hereby submits the attached Reply Brief in support of its motion *in limine* to preclude 2Wire from presenting evidence or argument on invalidity theories, prior art references, or background references that were not relied upon by its expert, Dr. Jacobsen, in her expert reports.

Plaintiff's Reply in Support of its Motion in *Limine* No. 2: 2Wire agrees not to pursue any invalidity defenses not previously disclosed in Dr. Jacobsen's invalidity expert reports.

2Wire, however, argues that there is no legal basis to preclude 2Wire and its expert, Dr. Jacobsen, from relying on prior art references that Dr. Jacobson did not rely on in her expert reports.¹ 2Wire Br. at p. 1. To the contrary, the law is clear that an expert should be precluded from testifying at trial to any opinions that were not disclosed in an expert report. *See* Fed. R. Civ. P. 37(c)(1), 26(a), 26(e); *Power Integrations, Inc. v. Fairchild Semiconductor Intern., Inc.*, 2007 WL 7658923, at *2 (D. Del. Sept. 14, 2007) (limiting the expert's testimony to what was contained in his expert reports). Dr. Jacobsen's invalidity reports included a section on the "background of the technology," yet nowhere in her reports did she substantively discuss 16 of the 24 references identified in 2Wire's §282 Notice. Pursuant to the Federal Rules, Dr. Jacobsen's reports should have contained a "complete statement of all opinions the witness will express and the basis. . . for them." *See* F.R.C.P. 26(a)(2)(B)(i). As such, 2Wire and Dr. Jacobsen should not be allowed to present undisclosed expert testimony or argument based on references Dr. Jacobsen never discussed under the guise that it pertains to the "state of the art." *See Nobelbiz, Inc. v. Global Connect, L.L.C.*, 2015 WL 11072170, at *3 (E.D. Texas Sept. 2, 2015) ("[the expert] can talk about the state of the art, but must avoid citing references that were not elected as prior art in his invalidity analysis").

2Wire and Dr. Jacobsen should be precluded from presenting expert testimony or argument based on so-called "background" prior art references that were not discussed or relied on in Dr. Jacobsen's expert reports, as it would be improper and highly prejudicial to TQ Delta.

Accordingly, TQ Delta's motion in *limine* should be granted.

¹ 2Wire contends that "any prior art outside of those relied upon by Dr. Jacobsen would be for the sole purpose of 'showing the state of the art.'" 2Wire Br. at p. 3.

Dated: April 10, 2019

Respectfully submitted,
FARNAN LLP

/s/ James P. Murphy

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT 12

(TQ Delta MIL No. 3)

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

PLAINTIFF TQ DELTA'S MOTIONS *IN LIMINE* No. 3 FOR FAMILY 2 TRIAL

TQ Delta hereby submits the attached motion *in limine* to exclude evidence, argument, or testimony by 2Wire of any purported negative commercial impact resulting from the enforcement by TQ Delta of its patents.

Plaintiff's Motion in *Limine* No. 3: TQ Delta moves *in limine* pursuant to FRE 401, 402, and 403 to preclude 2Wire from offering argument, evidence, or testimony of any purported negative impact (*e.g.*, effect on consumers, employees or the general public) from the enforcement by TQ Delta of its patents.

This Court should prohibit 2Wire from improperly appealing to the jurors' own economic self-interest in any way or from arguing or representing to the jury that any award of damages to TQ Delta made against 2Wire might result in any purported negative impact to consumers such as, for example, from higher prices.

Because of the consumer-driven nature of 2Wire's business, 2Wire might argue or imply that a "reasonable royalty" award to TQ Delta will increase its operating costs and that an increase in operating costs may result in increased prices for internet service providers.¹ Further, 2Wire may argue that an increase in purchasing price for internet service providers would then be passed along to consumers – like the jurors for example – in the form of higher prices for internet service. Such threats of higher prices for internet service would be designed to persuade the jury to not award damages to TQ Delta, or to lower the amount of any otherwise appropriate monetary award, in order to prevent an increase in the cost of internet for consumers such as themselves. Any such testimony, representation, or argument at trial would be improper and should be excluded under Rules 401 and 403.

The relevant issue in this case is whether claims 17 and 18 of the '881 patent are valid and whether 2Wire's Accused Products infringe those claims. Any such argument or statement

¹ The Accused Products in this case are digital subscriber line ("DSL") customer premises equipment ("CPE"), *i.e.*, modems for connecting to the Internet. The purpose of a DSL CPE is to provide internet service to a given location (*e.g.*, a user's home) using pre-existing telephone lines. Internet service providers such as AT&T purchase the DSL CPEs from 2Wire and then install the DSL CPEs in customer's homes.

about alleged impact on prices is simply not relevant to any issue in this case and should be excluded under Federal Rule of Evidence 401.

Further, to the extent such arguments had any relevance whatsoever, their probative value is significantly outweighed by the danger of unfair prejudice to TQ Delta. Most jurors are, themselves, consumers, and many consumers receive internet service at their homes via a DSL CPE. Therefore, any argument or representation that an award to TQ Delta will result in increased prices to consumers downstream improperly appeals to the juror's own economic self-interests, which is not an appropriate consideration upon which to assess damages. *See, e.g., Bio-Rad Laboratories, Inc. v. 10X Genomics, Inc.*, No. 15-cv-152-RGA, D.I. 470, Instruction 1.2 ("Do not let any bias, sympathy or prejudice that you may feel toward one side or the other influence your decision in any way."). Consequently, any such representations or arguments appealing to the juror's economic self-interests should be excluded pursuant to FRE 403.

Courts considering similar situations have held that arguments or evidence appealing to the juror's own economic interests - such as the threat of potentially higher prices, taxes, or insurance premiums - are improper and should be excluded from trial. *See, e.g., Ericsson Inc. v. TCL Communications Tech.*, No. 2:15-CV-00011, Dkt # 377, at p. 4 (E.D. Texas Nov. 29, 2017) (precluding defendant from presenting any evidence or argument that a damages award would affect consumers, employees or the general public such as suggesting that defendant may have to raise the price of its phones or discontinue certain phones in response to a verdict); *Frito-Lay North America, Inc. v. Medallion Foods, Inc.*, No. 4:12-CV-0074, Dkt # 222, at p. 2 (E.D. Texas Feb. 8, 2013) (precluding any suggestion or argument that a verdict in favor of the Frito-Lay would (i) affect the prices consumers pay (ii) affect the ability of store brands to compete (iii) reduce consumer choices (iv) be anti-competitive or (v) cost American jobs); *Mobile*

Telecommunications Tech., LLC v. Sprint Nextel Corp., No. 2:12-CV-832, Dkt # 372, at p. 3 (E.D. Texas Nov. 5, 2014) (precluding any argument that a damages award would negatively impact employee's or consumers of the Accused Products); *Bunch v. Pacific Cycle, Inc.*, No. 4:13-CV-0036, 2015 WL 11622954, at *5-6 (N.D. GA April 27, 2015) (precluding any argument or evidence that the verdict may affect insurance premiums, international relations with China, the price of bicycle products or employment of members in the community).²

Because appeals to jurors' economic self-interests through arguments, statements or representations that an award to TQ Delta might have a downstream effect such as higher prices to consumers would invoke the jurors' passions, are irrelevant to the issues for determination, and would unfairly prejudice TQ Delta, any such evidence, representation, or argument should be precluded.

² *Accord Hammer v. JP's Southwestern Foods, LLC*, No. 08-CV-0339, 2010 WL 11508966, at *3 (W.D. Mo. Sept. 14, 2010) (precluding defendant from appealing to the self-interest of the jury, specifically, from arguing that any judgment will result in higher prices for customers of the defendant or in the restaurant industry as a whole); *Roy v. Employers Mutual Ins. Cas. Co.*, 368 F.2d 902, 904-905 (5th Cir. 1966) (finding an argument by defendant's counsel stating "don't punish the insurance premium payers" was improper, and "was calculated to appeal to that personal interest which jurors have in not increasing their own insurance expenses"); *First National Bank of Louisville v. Lustig*, Nos. 87-CV-5488, 88-CV-1682, 1993 WL 8618, at *1 (E.D. La. Jan. 6, 1993) (precluding both parties from appealing to the self-interest of the jurors through argument or evidence regarding the substantial or rising cost of insurance premiums); *Goens v. Southern Union Co.*, No. 09-CV-0422, 2010 WL 2733096, at *5 (W.D. Mo. Sept. 14, 2010) (precluding defendant from arguing that a judgment rendered against the defendant could adversely affect the members of the jury, such as resulting in higher gas bills for customer of the defendant).

Dated: April 1, 2019

Respectfully submitted,
FARNAN LLP

/s/ *James P. Murphy*

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

**2WIRE, INC.'S OPPOSITION TO TQ DELTA LLC'S
MOTION *IN LIMINE* NO. 3 FOR FAMILY 2**

In its Motion *in Limine* No. 3, TQ Delta argues that it would be unfairly prejudicial for 2Wire to argue or represent to the jury that a verdict or damages award to TQ Delta would negatively impact consumers, including jurors. *See* Mot. No. 3 at 1. Because 2Wire does not intend to present any argument or evidence that an infringement verdict or a damages award to TQ Delta would raise jurors' prices, and also because the Court has recently clarified that damages will not be tried during the trial that is scheduled to begin on April 29, 2019, *see* D.I. 1043, this motion should be dismissed as moot.

However, if and when the issue of damages gets tried, 2Wire should not be prevented from presenting evidence regarding the *unreasonableness* of Dr. Putnam's damages model, including Dr. Putnam's opinions regarding his proposed royalty rate, the impact of Dr. Putnam's proposed rate on the cost and price of the accused CPE products, and the elasticity of demand. Such evidence and testimony is directly relevant to the issue of damages, and TQ Delta has not shown how related argument would unfairly prejudice TQ Delta.

I. ARGUMENT

A. TQ Delta's Motion Should Be Dismissed As Moot.

TQ Delta's motion *in limine* is directed to a hypothetical situation that will not be presented during the trial that is scheduled to begin on April 29, 2019: argument or suggestion by 2Wire that an infringement verdict or damages award to TQ Delta would adversely affect jurors. 2Wire does not intend to argue or present evidence to the jury that an infringement verdict would adversely impact jurors personally, and the Court has recently clarified that damages will not be tried during the trial scheduled to begin on April 29, 2019. Therefore, TQ Delta's motion should be dismissed as moot.

B. Evidence or Argument Relating To Dr. Putnam's Damages Model Should Not Be Excluded From Any Future Damages Trial.

2Wire must not be precluded, however, from presenting evidence and argument at any future damages trial regarding the *unreasonableness* of a damages award based on Dr. Putnam's damages opinions, if he is permitted to testify.¹ See, e.g., *Ericsson Inc. v. TCL Commc'ns Tech.*, No. 2:15-cv-00011, Dkt. # 377 at 4 (E.D. Tex. Nov. 29, 2017) ("TCL is not, however, precluded from presenting evidence or argument that there would not have been enough profit on sales of the accused products to support a royalty as large as Ericsson is seeking"). Thus, to the extent TQ Delta is arguing or suggesting that 2Wire be prevented in any way from offering evidence and argument at the damages trial directed to showing that Dr. Putnam's opinions regarding the royalty rate or his damages calculations are disproportionate or unreasonable, TQ Delta's motion should be denied. Dr. Putnam has opined that 2Wire's prices are "biased downwards" because they do not reflect the full cost of using DSL technology, including lack of licenses to DSL essential patents (Walsh Decl. Ex. C, Putnam Family 2 Opening Expert Rep't at ¶ 11), and ultimately opines that [REDACTED]

[REDACTED] (*id.* at ¶ 21). During deposition, Dr. Putnam [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. Walsh Decl. Ex. D, Putnam Family 1 Dep. Tr. at 86:4-88:22; 92:17-94:2. Dr. Putnam's damages model [REDACTED]
[REDACTED]

[REDACTED] The Court should not preclude 2Wire from pointing that out to the jury at any damages trial.

¹ See D.I. 723 (2Wire's Motion To Exclude The Expert Testimony of Jonathan Putnam, Ph.D. for Family 2).

II. CONCLUSION

TQ Delta's motion *in limine* should be denied as moot in the light of the Court's order (D.I. 1043) and for other reasons given above. If and when damages for Family 2 are tried, Wire should be permitted to offer all appropriate evidence and argument to show the jury that Dr. Putnam's damages opinions should be rejected.

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,

Plaintiff,

v.

2WIRE, INC.,

Defendant.

C.A. No. 13-cv-1835-RGA

**PLAINTIFF TQ DELTA'S REPLY IN SUPPORT OF ITS MOTION *IN LIMINE*
No. 3 FOR FAMILY 2 TRIAL**

TQ Delta hereby submits the attached Reply Brief in support of its motion *in limine* to exclude evidence, argument, or testimony by 2Wire of any purported negative commercial impact resulting from the enforcement by TQ Delta of its patents.

Plaintiff's in Support of its Motion in *Limine* No. 3: As an initial matter, 2Wire agrees not to “present any argument or evidence that an infringement verdict or a damages award to TQ Delta would raise jurors’ prices,” and states that TQ Delta’s motion *in limine* is moot based on the Court’s recent order separating out damages from infringement and validity. (2Wire Br. at p. 1.) Based on 2Wire’s agreement not to present argument or evidence that an infringement verdict or damages award to TQ Delta would raise prices to consumers (like the jurors), TQ Delta’s motion *in limine* should be granted.

The rest of 2Wire’s response is related to the issue of damages, which, as 2Wire acknowledged, is not at issue for the Family 2 trial scheduled for April 29, 2019. D.I. 1043. However, to the extent the Court considers 2Wire’s damages-related arguments at this time, TQ Delta’s motion *in limine* should also be granted with respect to the subsequent trial on damages. 2Wire argues that it should be allowed to introduce evidence during the damages trial regarding how Dr. Putnam’s damages model would increase the cost of the accused product (2Wire Br. at p. 2), but this is exactly the type of evidence that Courts routinely exclude. *See, e.g., Ericsson Inc. v. TCL Communications Tech.*, No. 2:15-CV-00011, Dkt # 377, at p. 4 (E.D. Texas Nov. 29, 2017) (precluding defendant from presenting any evidence or argument that a damages award would affect consumers); *Mobile Telecommunications Tech., LLC v. Sprint Nextel Corp.*, No. 2:12-CV-832, Dkt # 372, at p. 3 (E.D. Texas Nov. 5, 2014) (precluding any argument that a damages award would negatively impact employees or consumers). Even if it has any relevance (it does not), that relevance is substantially outweighed by the unfair prejudice to TQ Delta. Any impact on consumers is irrelevant and inflammatory.

Accordingly, TQ Delta’s motion *in limine* should be granted in its entirety.

Dated: April 10, 2019

Respectfully submitted,
FARNAN LLP

/s/ James P. Murphy

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT 13

(Blank)

EXHIBIT 14

(2Wire Declaration & Exhibits)

**DECLARATION OF RACHEL M. WALSH IN SUPPORT OF 2WIRE, INC.'S
OPPOSITION TO TQ DELTA, LLC'S FAMILY 2 MOTIONS IN LIMINE**

I, Rachel M. Walsh, declare as follows:

1. I am an attorney in the law firm of Goodwin Procter LLP, counsel of record for Defendant 2Wire, Inc. in the above-captioned matter. I am duly admitted to practice before all courts of the State of California, and I have been admitted *pro hac vice* to appear before this Court in the above-captioned matter. I have personal knowledge of the facts set forth in this declaration and, if called as a witness, could and would competently testify to the matters set forth herein.

2. Attached hereto as Exhibit A is a true and correct copy of excerpts from Defendant 2Wire, Inc.'s Invalidity Contentions in Response to TQ Delta's December 8, 2016 Final Infringement Contentions, served on January 23, 2017.

3. Attached hereto as Exhibit B is a true and correct copy of excerpts from Defendant 2Wire, Inc.'s Invalidity Contentions in Response to TQ Delta's July 2, 2018 Final Infringement Contentions, served on August 15, 2018.

4. Attached hereto as Exhibit C is a true and correct copy of the opening report of Jonathan Putnam for Family 2, served November 2, 2018.

5. Attached hereto as Exhibit D is a true and correct copy of transcript excerpts from the deposition of Dr. Jonathan Putnam, taken January 9, 2019.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 8th day of April 2019, at San Francisco, California.

/s/ Rachel M. Walsh
Rachel M. Walsh

EXHIBIT A

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,

Plaintiff/Counterdefendant,

v.

2WIRE, INC.

Defendant/Counterclaimant.

Civil Action No. 13-1835-RGA

JURY TRIAL DEMANDED

**DEFENDANT 2WIRE, INC.'S INVALIDITY CONTENTIONS IN RESPONSE TO TQ
DELTA'S DECEMBER 8, 2016 FINAL INFRINGEMENT CONTENTIONS**

Pursuant to the Court's order dated November 18, 2016, and as instructed by the Court during the scheduling conference held on March 3, 2016, defendant 2Wire, Inc. ("2Wire") provides the following invalidity contentions in response to TQ Delta's Updated Claim Charts for Representative Claims on Products that [REDACTED] served on December 8, 2016.¹

I. PRELIMINARY STATEMENT

In its Updated Claim Charts for Representative Claims on Products that [REDACTED] [REDACTED] served on December 8, 2016, TQ Delta identified, and 2Wire provides its invalidity contentions for, the following claims:

- Family 1: U.S. Patent No. 7,889,784 (the "'784 Patent") claim 1; U.S. Patent

¹ TQ Delta identified the claims addressed herein as "representative" in its Identification of Representative Claims, served on May 19, 2015. We refer to those claims here as "TQ Delta Representative Claims." 2Wire reserves all rights with respect to TQ Delta's identification of claims that it contends are representative.

abstract.

Nor do the elements of the claims – whether individually or as a whole – evidence any “inventive concept.” The concept of latency in communication paths was well known, as was the need to reduce latency between communication paths to keep messages or parts of messages from being received too far apart in time. All of the “transmission parameters” cited in the claims likewise were parameters well known to increase or decrease delay, or latency, (depending on whether the parameters were increased or decreased) both on individual communication paths and as between multiple communication paths.

B. Invalidity Under 35 U.S.C. § 102 and/or 35 U.S.C. § 103

2Wire contends that claims 17-18 of the ’881 Patent (the “Family 2 Patent”) are anticipated and/or rendered obvious by at least the following references:

- U.S. Patent No. 6,222,858 (“Counterman”)
- U.S. Patent No. 6,178,448 (“Gray”)
- U.S. Patent No. 7,068,657 (“Keller-Tuberg”)
- PCT Application No. PCT/NO99/0024, WO 99/39468 (“Edvardsen”)
- ATM Forum Technical Committee, Inverse Multiplexing over ATM (IMA) Specification Version 1.0 (“IMA Spec 1.0”)

The patents, publications, and references identified above qualify as prior art under 35 U.S.C. §§ 102(a), 102(b), 102(e), and/or 102(g). The charts identified as Exhibits E-1 to E-5 demonstrate how TQ Delta’s Representative Claims of the Family 2 Patent are anticipated and/or rendered obvious by the references above. Each chart identifies certain prior art to the Family 2 Patent and identifies at least one location in the prior art reference where each claim element of the asserted claims is located. Though the charts provide illustrative citations to where each claim element may be found in the prior art, the cited references may contain additional

disclosures of each claim element as well, and 2Wire reserves the right to assert that any claim element is disclosed in other portions of the cited references. In addition, 2Wire identifies, and incorporates here by reference, all prior art of record in the prosecution history of the Family 2 Patent (and all related patents and applications), and all prior art ITU-T Recommendations or other industry publications (such as ATM Forum, Broadband Forum, or similar groups' publications, reports, or specifications), any of which may anticipate and/or render TQ Delta's Representative Claims obvious. Further, 2Wire identifies any TQ Delta patents that claim the same priority date as any of the Family 2 Patents and disclose the same subject matter and for which a terminal disclaimer was not filed during prosecution, under the doctrine of obviousness-type double patenting. Further, 2Wire identifies each 2Wire accused product that was made before the priority date as prior art anticipating and/or rendering obvious (alone or in combination with other prior art references identified here) TQ Delta's Representative Claims. Additional evidence regarding the features and elements of prior art references may be provided by witness testimony, or by additional documents and materials describing the prior art, that may be identified through the course of ongoing discovery and investigation.

To the extent that a reference above is found to be missing a limitation of TQ Delta's Representative Claims, any one of the prior art references identified above may be combined with any one or more of the following references, all of which qualify as prior art under 35 U.S.C. §§ 102(a), 102(b), 102(e), and/or 102(g), to render TQ Delta's Representative Claims obvious under 35 U.S.C. § 103:

- U.S. Patent No. 5,617,417 ("Sathe")
- U.S. Patent No. 6,822,960 ("Manchester")
- U.S. Patent No. 5,617,417 ("Sathe")

- U.S. Patent No.5608733 (“Valee ‘733”)
- U.S. Patent No.6680954 (“Cam”)
- U.S. Patent No.6205142 (“Vallee ‘142”)
- U.S. Patent No.5727051 (“Holender”)
- U.S. Patent No.6178448 (“Gray”)
- U.S. Patent No.6408005 (“Fan”)
- U.S. Patent No.6941252 (“Nelson”)
- U.S. Patent No.6775268 (“Wang ‘268”)
- U.S. Patent No.6396837 (“Wang ‘837”)
- U.S. Patent No.6,747,964 (“Bender”)
- U.S. Patent No. 6,002,670 (“Rahman”)
- U.S. Patent No. 7,343,543 (“Mantha”)
- U.S. Patent No. 6,775,320 (“Tzannes ’320”)
- U.S. Patent No. 6,772,388 (“Cooper”)
- U.S. Patent No. 6,956,872 (“Djokovic”)
- EP1009154 (A2) (“Aravamudan”)
- DSL Forum Recommendation TR-042
- ITU-T Recommendation G.992.1 (06/1999)
- Broadband Forum Recommendation TR-042

In addition, any of the foregoing anticipatory or secondary prior art references listed above may be combined with any of the prior art of record in the prosecution history of the Family 2 Patent (and all related patents and applications), or with any prior art ITU-T

Recommendations or other industry publications (such as ATM Forum, Broadband Forum, or similar groups' publications, reports or specifications), to render TQ Delta's Representative Claims obvious. Further, any of the foregoing anticipatory or secondary prior art listed above may be combined with one another to render TQ Delta's Representative Claims obvious.

Moreover, one of ordinary skill in the art would have been motivated to combine one or more of the prior art references identified above to arrive at the combination of elements recited in each of TQ Delta's Representative Claims. The suggestion or motivation to modify or combine references for obviousness purposes is provided by the explicit and implicit teachings of the prior art identified by 2Wire, the knowledge of one of ordinary skill in the art, and/or the nature of the claimed invention and the problem(s) purportedly being solved. As an initial matter, 2Wire notes that each prior art reference is in or relates to the same field. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field or endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. The combination of prior art references identified in these contentions would have been obvious because the combinations represent the known potential options with a reasonable expectation of success. Additionally, one of ordinary skill in the art would have been motivated to create combinations identified in these contentions using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or teaching, suggestion, or motivation in the prior art generally. Also, market forces in the industry and the desire to improve features and performance would motivate the addition of features to systems as they become available, become smaller, become less expensive, become more commonly used,

provide better performance, reduce costs, size or weight, or predictably achieve other clearly desirable results. The motivation to combine references is exemplary only, and should not be used to limit these disclosures. There would have been substantial motivation to combine the prior art references prior to the invention date, and 2Wire reserves the right to and intends to supplement the foregoing with expert and other testimony. More detailed bases for the motivation to combine specific references will be set forth in 2Wire's expert report(s) on invalidity following claim construction and discovery on validity issues.

There are no secondary considerations of non-obviousness pertinent to the obviousness of the subject matter of the asserted claims. To the extent that TQ Delta raises any secondary considerations of non-obviousness, 2Wire reserves the right to address any such considerations, including by taking discovery on those issues and supplementing and/or amending its invalidity contentions.

In addition, the representative claims of Family 2 are invalid under the printed matter doctrine because certain limitations claim printed matter (i.e., content of information) that is not functionally or structurally related to the medium containing the printed matter. In the alternative, the representative claims of Family 2 are invalid under the printed matter doctrine because certain limitations claim printed matter and are not entitled to patentable weight, without which the claims are anticipated or rendered obvious by the cited references. By way of example and not of limitation, printed matter includes limitations directed to the contents of messages or data variables, such as a "transmission parameter value," which may be "an interleaving parameter value, a coding parameter value, a codeword size value or a framing parameter value."

Because discovery on invalidity issues has not yet commenced, 2Wire does not presently have any disclosures under 35 U.S.C. § 102(f). 2Wire reserves the right to amend and

supplement these § 102(f) contentions as further information and discovery are obtained including, in particular, with regard to the alleged conception and reduction-to-practice of the patents-in-suit.

C. Invalidity Under 35 U.S.C. § 112

2Wire lists below exemplary grounds upon which it contends TQ Delta's Representative Claims are invalid for failure to meet one or more requirements of 35 U.S.C. § 112. A more detailed basis for 2Wire's written description, enablement, and indefiniteness defenses will be set forth in 2Wire's expert report(s) on invalidity. TQ Delta has not provided rule-compliant infringement contentions identifying how it alleges TQ Delta's Representative Claims can be construed to cover any of the 2Wire's accused products. And the Court has not yet construed any terms in TQ Delta's Representative Claims. Furthermore, 2Wire has not yet had an opportunity to conduct discovery regarding invalidity (*e.g.*, inventor depositions, etc.). 2Wire reserves the right to supplement and/or amend these contentions based on Section 112 in light of claim construction and discovery on invalidity issues. Such supplementation and/or amendments may include, but are not limited to, invalidity contentions based on a failure to disclose the best mode of practicing the alleged invention and/or invalidity contentions based on indefiniteness, lack of written description, and/or lack of enablement should the claims be construed under 35 U.S.C. § 112 ¶ 6.

Invalidity Under 35 U.S.C. § 112 ¶ 1: TQ Delta's Representative Claims are invalid because the patent specification does not include sufficient description of the purported invention claimed, and the manner and process of using it, in such full, clear, concise, and exact terms as to enable any person of ordinary skill in the art to which it pertains to make and use the allegedly claimed invention without undue experimentation. 2Wire further contends that the full scope of each representative claim was not described with particularity in the specification to which

purport to claim both an apparatus and a method of using the apparatus. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005). For example, claim 8 of the '835 Patent recites an apparatus, then recites steps performed by the apparatus, such as “transmit signal using a first FIP setting,” “transmit a flag signal,” and “switch to using for transmission, a second FIP setting following transmission of the flag signal.” To the extent that TQ Delta’s Representative Claims invoke 35 U.S.C. § 112, ¶ 6 (pre-AIA), TQ Delta’s Representative Claims are invalid for failing to recite sufficient structure to perform the recited function. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. Jun. 16, 2015) (en banc). Moreover, to the extent that the claimed functions are accomplished merely using software, no specific algorithm is disclosed to perform the claimed function. And to the extent that TQ Delta’s Representative Claims do not invoke 35 U.S.C. § 112, ¶ 6 (pre-AIA), those claims are invalid for merely claiming the function of an apparatus. Thus, each representative claim is invalid as indefinite under Section 112, paragraph 2.

January 23, 2017

By: /s/ Jody Barillare
Colm F. Connolly (DSBA # 3151)
Jody Barillare (DSBA #5107)
MORGAN LEWIS & BOCKIUS LLP
The Nemours Building
1007 N. Orange Street, Suite 501
Wilmington, DE 19801
Tel: 302.574.3000
Fax: 302.574.3001
colm.connolly@morganlewis.com
jody.barillare@morganlewis.com

Brett Schuman (*pro hac vice*)
Rachel M. Walsh (*pro hac vice*)
GOODWIN PROCTER LLP
Three Embarcadero Center
San Francisco, California 94111
Tel: 415.733.6000

Fax: 415.677.9041
bschuman@goodwinlaw.com
rwalsh@goodwinlaw.com

CERTIFICATE OF SERVICE

I, Rachel M. Walsh, hereby certify that on January 23, 2017, a copy of Defendant 2Wire, Inc.'s Invalidity Contentions in Response to TQ Delta's December 8, 2016 Final Infringement Contentions were served on the following as indicated:

Via E-Mail

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Attorneys for TQ Delta, LLC

Via E-Mail

Peter J. McAndrews (admitted pro hac vice)
Timothy J. Malloy (admitted pro hac vice)
Thomas J. Wimbiscus (admitted pro hac vice)
Sharon A. Hwang (admitted pro hac vice)
Paul W. McAndrews (admitted pro hac vice)
Anna M. Targowska (admitted pro hac vice)
MCANDREWS, HELD & MALLOY, LTD.
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com
twimbiscus@mcandrews-ip.com
pwmcandrews@mcandrews-ip.com
atargowska@mcandrews-ip.com

/s/ Rachel M. Walsh

EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,

Plaintiff/Counterdefendant,

v.

2WIRE, INC.

Defendant/Counterclaimant.

Civil Action No. 13-1835-RGA

JURY TRIAL DEMANDED

**DEFENDANT 2WIRE, INC.'S INVALIDITY CONTENTIONS IN RESPONSE TO TQ
DELTA'S JULY 2, 2018 FINAL INFRINGEMENT CONTENTIONS**

Pursuant to the Court's April 11, 2018 Final Scheduling Order, defendant 2Wire, Inc. ("2Wire") provides the following invalidity contentions in response to TQ Delta's Final Claim Charts for Products that Contain [REDACTED] served on July 2, 2018.¹

I. PRELIMINARY STATEMENT

In its Final Claim Charts for Products that Contain [REDACTED] served on July 2, 2018, TQ Delta identified, and 2Wire provides its invalidity contentions for, the following claims:

- Family 1: U.S. Patent No. 7,889,784 (the "'784 Patent") claims 1 and 2 (collectively, the "Family 1 Patent" and the "Asserted Family 1 Claims");
- Family 2: U.S. Patent No. 7,453,881 (the "'881 Patent") claims 17 and 18 (collectively, the "Family 2 Patent" and the "Asserted Family 2 Claims");

¹ TQ Delta identified the asserted claims for each of the patent families in its in its Final Claim Charts for Products that Contain [REDACTED] served on July 2, 2018. We collectively refer to those asserted claims here as "TQ Delta Asserted Claims".

alleged invention.

B. Invalidity Under 35 U.S.C. § 102 and/or 35 U.S.C. § 103

Claims 17-18 of the '881 Patent (the "Family 2 Patent") are anticipated and/or rendered obvious by at least the following references:

- U.S. Patent No. 6,222,858 ("Counterman")
- U.S. Patent No. 6,178,448 ("Gray")
- U.S. Patent No. 7,068,657 ("Keller-Tuberg")
- PCT Application No. PCT/NO99/0024, WO 99/39468 ("Edvardsen")
- ATM Forum Technical Committee, Inverse Multiplexing over ATM (IMA) Specification Version 1.0 ("IMA Spec 1.0")

The patents, publications, and references identified above qualify as prior art under 35 U.S.C. §§ 102(a), 102(b), 102(e), and/or 102(g). The charts identified as Exhibits B-1 through B-5 demonstrate how TQ Delta's Asserted Claims of the Family 2 Patent are anticipated and/or rendered obvious by the references above. Each chart identifies certain prior art to the Family 2 Patent and identifies at least one citation in the prior art reference where each claim element of the asserted claims is disclosed. Though the charts provide illustrative citations to where each claim element may be found in the prior art, the cited references may contain additional disclosures of each claim element as well, and 2Wire reserves the right to assert that any claim element is disclosed in other portions of the cited references. In addition, 2Wire identifies, and incorporates here by reference, all prior art of record in the prosecution history of the Family 2 Patent (and all related patents and applications), and all prior art ITU-T Recommendations or other industry publications (such as ATM Forum, Broadband Forum, or similar groups' publications, reports, or specifications), any of which may anticipate and/or render TQ Delta's Asserted Claims obvious. Further, 2Wire identifies any TQ Delta patents that claim the same

priority date as any of the Family 2 Patents and disclose the same subject matter and for which a terminal disclaimer was not filed during prosecution, under the doctrine of obviousness-type double patenting. Additional evidence regarding the features and elements of prior art references may be provided by witness testimony, or by additional documents and materials describing the prior art, that may be identified through the course of ongoing discovery and investigation.

To the extent that a reference above is found to be missing a limitation of TQ Delta's Asserted Claims, any one of the prior art references identified above may be combined with any one or more of the following references, all of which qualify as prior art under 35 U.S.C. §§ 102(a), 102(b), 102(e), and/or 102(g), to render TQ Delta's Asserted Claims obvious under 35 U.S.C. § 103:

- U.S. Patent No. 5,617,417 ("Sathe")
- U.S. Patent No. 6,822,960 ("Manchester")
- U.S. Patent No. 5,617,417 ("Sathe")
- U.S. Patent No. 5,608,733 ("Valee '733")
- U.S. Patent No. 6,680,954 ("Cam")
- U.S. Patent No. 6,205,142 ("Vallee '142")
- U.S. Patent No. 5,727,051 ("Holender")
- U.S. Patent No. 6,178,448 ("Gray")
- U.S. Patent No. 6,408,005 ("Fan")
- U.S. Patent No. 6,941,252 ("Nelson")
- U.S. Patent No. 6,775,268 ("Wang '268")

- U.S. Patent No. 6,396,837 (“Wang ‘837”)
- U.S. Patent No. 6,747,964 (“Bender”)
- U.S. Patent No. 6,002,670 (“Rahman”)
- U.S. Patent No. 7,343,543 (“Mantha”)
- U.S. Patent No. 6,775,320 (“Tzannes ’320”)
- U.S. Patent No. 6,772,388 (“Cooper”)
- U.S. Patent No. 6,956,872 (“Djokovic”)
- EP1009154 (A2) (“Aravamudan”)
- DSL Forum Recommendation TR-042
- ITU-T Recommendation G.992.1 (06/1999)
- Broadband Forum Recommendation TR-042

Specific combinations that render TQ Delta’s Asserted Claims obvious under 35 U.S.C. § 103 using these references are set forth in Exhibits B-1 through B-5. Defendant reserves the right to rely on the references listed above for motivation to combine, the state of the art and/or the background knowledge of one of ordinary skill in the art.

In addition, any of the foregoing anticipatory or secondary prior art references listed above may be combined with any of the prior art of record in the prosecution history of the Family 2 Patent (and all related patents and applications), or with any prior art ITU-T Recommendations or other industry publications (such as ATM Forum, Broadband Forum, or similar groups’ publications, reports or specifications), to render TQ Delta’s Asserted Claims obvious. Further, any of the foregoing anticipatory or secondary prior art listed above may be combined with one another to render TQ Delta’s Asserted Claims obvious.

Moreover, one of ordinary skill in the art would have been motivated to combine one or

more of the prior art references identified above to arrive at the combination of elements recited in each of TQ Delta's Asserted Claims. The suggestion or motivation to modify or combine references for obviousness purposes is provided by the explicit and implicit teachings of the prior art identified by 2Wire, the knowledge of one of ordinary skill in the art, and/or the nature of the claimed invention and the problem(s) purportedly being solved. As an initial matter, 2Wire notes that each prior art reference is in or relates to the same field, high-speed communications, and more specifically, ATM and DSL networks. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field or endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. The combination of prior art references identified in these contentions would have been obvious because the combinations represent the known potential options with a reasonable expectation of success. Additionally, one of ordinary skill in the art would have been motivated to create combinations identified in these contentions using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or teaching, suggestion, or motivation in the prior art generally. Also, market forces in the industry and the desire to improve features and performance would motivate the addition of features to systems as they become available, become smaller, become less expensive, become more commonly used, provide better performance, reduce costs, size or weight, or predictably achieve other clearly desirable results. For example, one common, known method of handling a difference in delay was to provide an additional buffer or memory of appropriate size. Those in the DSL and high-speed communications industry understood that larger memory increased costs and complexity

of a transceiver or modem, and that a smaller, cheaper, less complex device was desirable. Moreover, those of ordinary skill in the art at the time of the alleged invention understood that increased differential delay in multiplexed (or “bonded”) communications systems had the effect of slowing down overall data rates. Those of ordinary skill in the art also understood that providing higher overall data rates was desirable and could provide an advantage in the marketplace. The motivation to combine references is exemplary only, and should not be used to limit these disclosures. There would have been substantial motivation to combine the prior art references prior to the invention date, and 2Wire reserves the right to and intends to supplement the foregoing with expert and other testimony. More detailed bases for the motivation to combine specific references will be set forth in 2Wire’s attached invalidity charts and expert report(s) on invalidity following claim construction and discovery on validity issues.

To the extent that TQ Delta raises any secondary considerations of non-obviousness, for example, in its expert reports, 2Wire reserves the right to address any such considerations.

C. Invalidity Under 35 U.S.C. § 112

2Wire lists below exemplary grounds upon which it contends TQ Delta’s Asserted Claims are invalid for failure to meet one or more requirements of 35 U.S.C. § 112. A more detailed basis for 2Wire’s written description, enablement, and indefiniteness defenses will be set forth in 2Wire’s expert report(s) on invalidity. 2Wire reserves the right to supplement and/or amend these contentions based on Section 112 in light of discovery on invalidity issues and on any other basis permitted by the Court or the applicable rules. Such supplementation and/or amendments may include, but are not limited to, invalidity contentions based on indefiniteness, lack of written description, and/or lack of enablement.

Invalidity Under 35 U.S.C. § 112 ¶ 1: TQ Delta’s Asserted Family 2 Claims are invalid because the patent specification does not include sufficient description of the subject

112, paragraph 2.

August 15, 2018

By: /s/ Jody C. Barillare

Jody C. Barillare (#5107)
MORGAN LEWIS & BOCKIUS LLP
The Nemours Building
1007 N. Orange Street, Suite 501
Wilmington, DE 19801
Tel: 302.574.3000
Fax: 302.574.3001
jody.barillare@morganlewis.com

Brett Schuman (*pro hac vice*)
Rachel M. Walsh (*pro hac vice*)
GOODWIN PROCTER LLP
Three Embarcadero Center
San Francisco, California 94111
Tel: 415.733.6000
Fax: 415.677.9041
bschuman@goodwinlaw.com
rwalsh@goodwinlaw.com

CERTIFICATE OF SERVICE

I, Jody C. Barillare, hereby certify that on August 15, 2018, a copy of DEFENDANT 2WIRE, INC.'S INVALIDITY CONTENTIONS IN RESPONSE TO TQ DELTA'S JULY 2, 2018 FINAL INFRINGEMENT CONTENTIONS was served on the following as indicated:

Via E-Mail

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Attorneys for TQ Delta, LLC

Via E-Mail

Peter J. McAndrews (admitted pro hac vice)
Timothy J. Malloy (admitted pro hac vice)
Thomas J. Wimbiscus (admitted pro hac vice)
Sharon A. Hwang (admitted pro hac vice)
Paul W. McAndrews (admitted pro hac vice)
Anna M. Targowska (admitted pro hac vice)
Rajendra Chiplunkar (admitted pro hac vice)
MCANDREWS, HELD & MALLOY, LTD.
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com
twimbiscus@mcandrews-ip.com
pwmcandrews@mcandrews-ip.com
atargowska@mcandrews-ip.com

/s/ Jody C. Barillare _____

EXHIBIT C

REDACTED

EXHIBIT D

REDACTED

EXHIBIT 15

(2Wire MIL No. 1)

2WIRE, INC.'S MOTION *IN LIMINE* TO PRECLUDE

Pursuant to Federal Rules of Evidence 402, 403, and 411, 2Wire respectfully moves the Court to preclude TQ Delta from introducing evidence of certain agreements and letters relating to [REDACTED] of 2Wire in litigation against TQ Delta [REDACTED], as well as interrogatory responses and deposition testimony regarding the same.¹ Such evidence should be excluded from the Family 2 trial for at least three reasons: (1) indemnity-related evidence is generally inadmissible under Rule 411; (2) the [REDACTED] [REDACTED] is not relevant to any issue to be tried during the Family 2 trial, and (3) the evidence would only confuse the jury, waste time and be prejudicial to 2Wire since there is no evidence that [REDACTED]

First, under Federal Rule of Evidence 411, “[e]vidence that a person was or was not insured against liability is not admissible to prove whether the person acted negligently or otherwise wrongfully.” Accordingly, agreements regarding indemnity, such as those between [REDACTED] and 2Wire, are generally not admissible in patent infringement cases. *See, e.g., Curtis Mfg. Co., Inc. v. Plasti-Clip Corp.*, 933 F.Supp. 94, 100-101 (D.N.H. 1995) (granting motion *in limine* to exclude evidence of indemnity agreement under Rule 411); *Axcess Int’l, Inc. v. Savi Techs. Inc.*, Case No. 3:10-cv-1033-F, 2013 U.S. Dist. LEXIS 97079, at * 16 (N.D. Tex. Jan. 25, 2013) (excluding indemnity agreement in patent infringement case); *cf. Carrier Corp. v. Goodman Global, Inc.*, 162 F.Supp.3d 345, 366-67 (D. Del. 2016) (granting new trial based on improper introduction and use of indemnity agreement during indirect infringement patent trial).

Furthermore, while some courts have admitted evidence of indemnity to show a defendant’s intent to induce infringement under § 271(b), *see, e.g., In re Gabapentin Patent*

¹ The agreement and related letters have been identified on TQ Delta’s proposed trial exhibit list, suggesting an intent to use them at trial by TQ Delta. The specific documents at issue in this *in limine* motion are attached as Exhibits H-M to the Walsh Declaration in support of 2Wire, Inc.’s Family 2 Motions *in Limine*.

Litigation, MDL No. No. 1384, 2011 WL 1807448, at *9 (D.N.J. 2011) (rejecting admission of an indemnification agreement to show willfulness or availability of non-infringing alternatives, but admitting such evidence solely to show induced infringement, albeit with an appropriate limiting instruction), TQ Delta is pursuing only a direct infringement claim at the Family 2 trial. TQ Delta has not identified any direct infringer for purposes of any induced infringement claim; did not identify evidence supporting any induced infringement claim in its court-ordered Final Claim Charts; and has not proposed any jury instructions on induced infringement in its Family 2 jury instructions.

Second, the [REDACTED] should be excluded as not relevant to any issue that will be tried relating to the Family 2 patents. *See, e.g., Access Int'l*, 2013 U.S. Dist. LEXIS at * 16 (excluding indemnity agreement on relevance grounds). The [REDACTED] have no relevance to the only issues that 2Wire understands are at issue for the Family 2 trial scheduled to begin on April 29, 2019, *i.e.*, infringement and invalidity of claims 17 and 18 of the '881 patent. *See* D.I. 1043.

Third, even if TQ Delta tried to argue that the [REDACTED] and related letters are somehow relevant to the Family 2 trial, any minimal relevance of these materials would be substantially outweighed by the risk of confusion and unfair prejudice to 2Wire. This is especially true here because, while [REDACTED]

[REDACTED] *See, e.g., Walsh Decl., Ex. N* (Shead Dep. Tr. 254:2-17). So, if TQ Delta were permitted to put in evidence of the [REDACTED], 2Wire would then need to present evidence that [REDACTED] 2Wire, risking jury confusion and

waste of time. Moreover, there is a risk that such evidence would prejudice 2Wire by suggesting that 2Wire is liable for any wrongdoing. Therefore, this evidence should be excluded under Fed. R. Evid. 403.

For at least these reasons, 2Wire respectfully requests that the Court preclude TQ Delta from introducing evidence of the [REDACTED], and any associated testimony and interrogatory responses, at trial relating to the Family 2 patents.

TQ Delta's response to 2Wire's motion in limine requesting preclusion of the [REDACTED]

2Wire's motion *in limine* to preclude from trial the [REDACTED] [REDACTED] should be denied. As an initial matter, TQ Delta does not intend to introduce the indemnity agreement as "[e]vidence that [2Wire] was or was not insured against liability. . . to prove whether [2Wire] acted negligently or otherwise wrongfully." (2Wire Br. at p. 1) 2Wire's argument for exclusion under Rule 411 is therefore inapplicable. TQ Delta intends to introduce the indemnity agreement and related letters in order to (1) [REDACTED] [REDACTED] [REDACTED] 3) provide evidence that the '881 patent is standard-essential; and (4) demonstrate 2Wire's state of mind regarding the standard essentiality of the '881 patent. For all of those reasons, the [REDACTED] [REDACTED] are relevant to the issues for the Family 2 trial and as such, should not be excluded. Furthermore, any alleged confusion or prejudice of this evidence to the jury can be cured with a proper jury instruction.

2Wire states that "indemnity-related evidence is generally inadmissible under Rule 411." 2Wire Br. at p. 1. This is a misstatement of Rule 411, which states, in its entirety:

Evidence that a person was or was not insured against liability is not admissible to prove whether the person acted negligently or otherwise wrongfully. But the court may admit this evidence for another purpose, such as proving a witness's bias or prejudice or proving agency, ownership, or control.

Fed. R. Evid. 411. Rule 411 therefore does not state that "indemnity-related evidence is generally inadmissible" (2Wire Br. at 1); rather, it states that such evidence is "not admissible to prove whether the person acted negligently or otherwise wrongfully." And, contrary to 2Wire's argument, TQ Delta may properly introduce such "evidence for another purpose, such as proving a witness's bias or prejudice" as allowed by Rule 411.

2Wire alleges that the indemnification agreement and related letters are not relevant to the issues being tried at the Family 2 trial, *i.e.*, infringement and validity. 2Wire is incorrect. The indemnification agreement and related letters are relevant to infringement and validity for several reasons. First, they are relevant evidence that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]¹

Moreover, 2Wire contests the standard-essentiality of the ‘881 patent. A determination of whether the ‘881 patent is standard-essential is relevant to the issue of infringement because if the ‘881 patent is standard-essential to the G.998.1 (Ethernet bonding standard), then TQ Delta need only prove that the Accused Products comply with that standard in order to demonstrate that the Accused Products infringe the ‘881 patent.² The indemnification agreement and related letters are relevant to the determination of the ‘881 patent’s standard essentiality because in the

¹ [REDACTED]

² And, by 2Wire’s own admission in its [REDACTED]
[REDACTED]
[REDACTED] *See, e.g., Fujitsu Ltd, v. Netgear Inc.*, 620 F.3d 1321, 1327 (Fed. Cir. 2010) (“If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement. . . if an accused product operates in accordance with a standard, then comparing the claims to that standard is the same as comparing the claims to the accused product.”); *Intellectual Ventures I LLC v. Toshiba Corp.*, No. 13-CV-453-SLR Dkt. 635 at p. 18 (D. Del. Feb. 10, 2017).

related letters, [REDACTED]

[REDACTED] See D.I. 926-1 (Aug. 10, 2017 [REDACTED]). And, as discussed above, 2Wire relies on [REDACTED]

[REDACTED] See Ex. A (2Wire's Second Suppl. Response to TQ Delta's Interrogatory No. 2) at p. 5. [REDACTED]

Additionally, [REDACTED]

[REDACTED] As indicated in TQ Delta's Proposed Pre-Trial Order for Family 2, TQ Delta intends to move to amend its pleadings to add a claim for post-suit willful infringement. 2Wire's subjective intent regarding the standard-essentiality of the '881 patent during the litigation is relevant to the willfulness inquiry. It is particularly relevant because, as 2Wire has stated, [REDACTED]

[REDACTED] See Ex. B (2Wire's Non-Infringement Contentions and Suppl. Responses to TQ Delta's Interrogatory Nos. 3 and 6) at p. 3. As such, 2Wire's knowledge that [REDACTED]

Any alleged unfair prejudice to 2Wire by the introduction of the indemnification agreement or the related letters can be cured with the limiting instruction on the use of the documents for their relevant purposes. Accordingly, 2Wire's motion in *limine* should be denied.

Dated: April 8, 2019

Respectfully submitted,
FARNAN LLP

/s/ *James P. Murphy*

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT A

REDACTED

EXHIBIT B

REDACTED

EXHIBIT C

REDACTED

EXHIBIT 16

(2Wire MIL No. 2)

**2WIRE, INC.'S MOTION *IN LIMINE* TO PRECLUDE EVIDENCE AND TESTIMONY
RELATING TO THE DOCTRINE OF EQUIVALENTS**

I. INTRODUCTION

Pursuant to Federal Rules of Civil Procedure 26 and 37(c) and Federal Rules of Evidence 401, 402, and 403, 2Wire, Inc. (“2Wire”) moves the Court to preclude TQ Delta, LLC (“TQ Delta”) from introducing any evidence at trial relating to purported infringement under the doctrine of equivalents. At no point during fact or expert discovery in this case did TQ Delta disclose any theory, or any evidence supporting any theory, of infringement under the doctrine of equivalents. Indeed, TQ Delta first mentioned a possible doctrine of equivalents infringement theory in its initial draft of the Family 2 jury instructions, served on 2Wire on March 25, 2019. TQ Delta’s failure to disclose any infringement theory under the doctrine of equivalents, or any evidence in support of a such a theory, until after the close of fact and expert discovery means that TQ Delta should be precluded from presenting any such theory at trial.

II. FACTUAL BACKGROUND

On November 4, 2013, TQ Delta filed its original complaint. D.I. No. 1. It did not allege infringement under the doctrine of equivalents for the Family 2 patent. TQ Delta then served amended complaints on November 20, 2013 (D.I. No. 6), February 7, 2014 (D.I. No. 24), October 13, 2017. (D.I. No. 380). Again, at no point was infringement under the doctrine of equivalents alleged for the Family 2 patent. On October 17, 2014, 2Wire served its first set of interrogatories to TQ Delta. Walsh Decl., Ex. A. Interrogatory No. 5 asked TQ Delta to disclose its infringement theories, including any infringement theory under the doctrine of equivalents:

In the form of a chart, identify with particularity (1) where each element of each Asserted Claim is found within each Accused Product, including, for each element that You contend is governed by 35 U.S.C. § 112(f), the identity of the structure(s), act(s), or material(s) in the Accused Product that perform the claimed function; (2) whether each element of each Asserted Claim is claimed to be *literally present or present under the doctrine of equivalents* in the Accused Product; (3) the priority date to which each Asserted Claim allegedly is entitled, for any patent that claims priority to an earlier application; and (4) each system, apparatus device, service, process, method, act, or other

instrumentality that allegedly incorporates or reflects each Asserted Claim, if You wish to preserve the right to rely, for any purpose on the assertion that Your (or Your predecessor-in-interest's) own system, apparatus, device, service, process, method, act, or other instrumentality practices any claimed invention.”

Id. (emphasis added). In its November 17, 2014 response to Interrogatory No. 5, Walsh Decl.

Ex. B, TQ Delta never disclosed any doctrine of equivalents theory for Family 2. On July 2, 2018, TQ Delta served its Final Claim Charts for Family 2. Walsh Decl., Exs. C (cover pleading) and D (final claim chart for '881 patent). TQ Delta did not disclose any evidence in support of any infringement theory under the doctrine of equivalents here, either. TQ Delta's infringement expert, Dr. Cooklev, never discussed infringement under the doctrine of equivalents in either of his infringement-related expert reports. Walsh Decl., Exs. E (Cooklev's Op. Rpt.) and F (Cooklev's Reply Rpt.). On March 25, 2019, TQ Delta served an initial set of proposed jury instructions. In these proposed instructions, TQ Delta *for the first time* raised the issue of infringement under the doctrine of equivalents for the Family 2 patent. Ex. G (3/25/19 Proposed Joint Jury Instructions).

III. ARGUMENT

The Court should preclude TQ Delta from introducing evidence at trial relating to alleged infringement under the doctrine of equivalents. The Federal Rules of Civil Procedure provide that a party who fails to disclose information or identify a witness as required by Rule 26 or pursuant to Court Order is “not allowed to use that information or witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or is harmless.” Fed. R. Civ. P. 37(c)(1); *see also Woods v. DeAngelo Marine Exhaust, Inc.*, 692 F.3d 1272, 1279-83 (Fed. Cir. 2012) (finding that Fed. R. C. P. 26 “prohibits parties who are aware of their deficient [discovery] response from holding back material items and disclosing them at the last moment.”).

As described above, TQ Delta never disclosed a theory of infringement under the doctrine of equivalents for Family 2 prior to the close of discovery. It did not do so in response to 2Wire's Interrogatory No. 5; it did not do so in its court-ordered Final Claim Charts; and it did not do so in any of its infringement-related expert reports. 2Wire would be severely prejudiced if TQ Delta is now allowed to introduce this theory for the first time at trial. 2Wire did not have the opportunity to conduct fact discovery on this theory nor did 2Wire have the opportunity to examine any of TQ Delta's experts on any purported infringement theory under the doctrine of equivalents. *See Amgen Inc. v. Amneal Pharm. LLC*, No. CV 16-853-MSG, 2018 WL 1885664, at *7 (D. Del. Apr. 19, 2018) (court finding there would be prejudice in allowing plaintiff to assert a last minute the doctrine of equivalents theory against defendants because there were "multiple ways [defendant] could have taken a different approach to litigation had [plaintiff] timely asserted the doctrine of equivalents against it, from having its own expert opine on the theory to pursuing different avenues of discovery."); *see also, e.g., Nike Inc. v. Wolverine World Wide, Inc.*, 43 F.3d 644, 648 (Fed.Cir.1994) (affirming the preclusion of a doctrine of equivalents claim when the plaintiff reserved its right to bring a doctrine of equivalents claim, but waited until after the close of discovery to begin testing for infringement under the doctrine of equivalents); *Axcess Int'l, Inc. v. Savi Techs., Inc.*, Case No.3:10-cv-1033-F, 2013 U.S. Dist. LEXIS 97079, *12 (N.D. Tex., Jan. 25, 2013) (court granting defendant's motion *in limine*, limiting all expert testimony to what was disclosed in their expert reports).

IV. CONCLUSION

For the reasons stated above, 2Wire respectfully requests that the Court preclude TQ Delta from introducing any evidence relating to the doctrine of equivalents.

TQ Delta's response to 2Wire's motion *in limine* requesting preclusion of evidence and testimony related to the doctrine of equivalents

2Wire's motion *in limine* relating to the doctrine of equivalents should be denied. TQ Delta did not intend to argue infringement based on the doctrine of equivalents because literal infringement exists under the Court's claim construction. However, should 2Wire be allowed to introduce and argue a previously-abandoned claim construction, TQ Delta reserves the right to argue infringement based on the doctrine of equivalents.

2Wire, in its April 26, 2017 identification of claim terms for construction (pursuant to D.I. 280, ¶ 9), proposed the following claim construction for the term "utilizing at least one transmission parameter value to reduce a difference in latency" / "utilizing at least one transmission parameter value. . . to reduce a difference in latency":

configuring at least one transmission parameter value to decrease a known difference in latency

Ex. A (Family 2 – Defendants' Disclosure of Claim Terms for Construction and Proposed Definitions) at p. 4 (emphasis added). By this construction, 2Wire was asserting that in order "to reduce a difference in latency" there must exist a known difference in latency (i.e., a first difference in latency) that is subsequently reduced to a lower difference in latency (i.e., a second difference). After the parties met and conferred where TQ Delta explained that an example embodiment of the '881 patent reduces a difference in latency by configuring transmission parameters so that there is a reduced difference in latency in the first instance¹, 2Wire abandoned this construction and, instead, proposed the following construction:

¹ See D.I. 743-1 ('881 patent) at 6:56-65 ("Another effective method of ***reducing the difference in latency*** between DSL PHYs is mandate that all DSL PHYs are ***configured*** with transmission parameters in order to provide the same configuration latency. An exemplary method of accomplishing the same configuration latency is by configuring the exact same data rate, coding parameters, interleaving parameters, etc. on all DSL PHY s. Alternatively, different PHYs can have, for example, different data

configuring at least one transmission parameter value to minimize the difference in the configuration latencies between the bonded transceivers

D.I. 294-1 (Family 2 – Joint Claim Construction Chart) at Ex. A, p. 3.

Though 2Wire abandoned its original construction, which required a “known difference in latency,” it appears that 2Wire’s expert Dr. Jacobsen’s is attempting to resurrect it. In her expert declaration filed in support of 2Wire’s motion for summary judgment of non-infringement of the ‘881 patent, Dr. Jacobsen asserts that:

[REDACTED]

D.I. 722 at ¶ 97. She further argued [REDACTED]

[REDACTED]

[REDACTED]” See D.I. 722 at ¶ 149. While it is not true that the Court did not consider the construction of “reduce a difference in configuration latency,” it would be improper and highly prejudicial for 2Wire to be allowed to now raise and argue to the jury a construction that it abandoned before the Court could consider it during the claim construction phase of this case. Accordingly, TQ Delta’s concern that 2Wire’s expert may argue for an abandoned construction is not mere conjecture.

Therefore, while 2Wire should not be allowed to introduce evidence or arguments at trial based on its previously-abandoned claim construction positions, if 2Wire is allowed to do so, TQ

rates but use the appropriate coding or interleaving parameters to have the same latency on all the bonded PHYs.”) (emphasis added).

Delta reserves the right to argue infringement under the doctrine of equivalents. TQ Delta respectfully requests that 2Wire's motion in *limine* be denied.

Dated: April 8, 2019

Respectfully submitted,
FARNAN LLP

/s/ James P. Murphy

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT A

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

<div>TQ DELTA, LLC, Plaintiff, v. 2WIRE, INC. Defendant.</div>	Civil Action No. 13-cv-1835-RGA
<div>TQ DELTA, LLC, Plaintiff, v. ZHONE TECHNOLOGIES, INC. Defendant.</div>	Civil Action No. 13-cv-1836-RGA
<div>TQ DELTA, LLC, Plaintiff, v. ZYXEL COMMUNICATIONS, INC. and ZYXEL COMMUNICATIONS CORPORATION, Defendants.</div>	Civil Action No. 13-cv-2013-RGA
<div>TQ DELTA, LLC, Plaintiff, v. ADTRAN, INC. Defendant.</div>	Civil Action No. 14-cv-954-RGA
<div>ADTRAN, INC., Plaintiff, v. TQ DELTA, LLC. Defendant.</div>	Civil Action No. 15-cv-121-RGA

**FAMILY 2 - DEFENDANTS' DISCLOSURE OF CLAIM TERMS FOR
CONSTRUCTION AND PROPOSED DEFINITIONS**

Pursuant to the Third and Final Scheduling Order entered in this Action, Defendants 2Wire, Inc., Zhone Technologies, Inc., ZyXEL Communications, Inc., ZyXEL Communications Corp., and AdTRAN, Inc. (collectively, “Defendants”) propose that the following terms and phrases appearing in Plaintiff TQ Delta, LLC’s (“TQ Delta”) U.S. Patent Nos. 7,453,881 (the “’881 patent”); 7,978,706 (the “’706 patent”); and 8,422,511 (the “’511 patent”); and 7,809,028 (the “’028 patent”)¹ (collectively, the “Family 2 Patents”) be construed. Defendants also provide their proposed constructions for each respective term.

Defendants reserve the right, inter alia, to modify or supplement this disclosure to facilitate agreement with TQ Delta to avoid duplication of terms or phrases, to reflect newly received information and discovery or to reflect changes in TQ Delta’s contentions. Furthermore, Defendants reserve the right to amend their proposed claim terms and phrases for construction once they have had an opportunity to review TQ Delta’s proposed terms and phrases for construction and their respective proposed definitions. Defendants reserve the right to propose a construction for any term identified by TQ Delta now, or at any other time during claim construction. TQ Delta has not served rules-compliant final infringement contentions that demonstrate how Defendants’ accused products allegedly infringe each limitation of each of TQ Delta’s asserted claims, and Defendants’ proposed terms and claim constructions are made based on TQ Delta’s infringement contentions to date. Defendants reserve the right to revise their proposed terms and constructions based on any infringement contentions later served by TQ Delta. Defendants reserve the right to assert that the preambles of the Family 2 Patents are

¹ The ’028 patent is not asserted against Defendant 2Wire, Inc.

limiting. Defendants further reserve the right to assert that any of the terms contained in asserted claims are indefinite under 35 U.S.C. § 112.

Defendants are prepared to meet and confer with TQ Delta at a mutually agreeable time to exchange proposed constructions for terms disclosed by TQ Delta, but not by Defendants, and to narrow the terms in need of construction and the disputes over construction. The list of terms and phrases provided below is not necessarily intended as an indication that any such term or phrase should have a construction that is different from its common and ordinary meaning. Defendants anticipate that the parties may be able to narrow the list of terms and phrases to be construed during the process culminating in the filing of a Joint Claim Construction Statement.

Claim Term	Patents & Claims	Proposed Definition
“transceiver”	’881 patent, claim 17, 18; ’706 patent, claim 2; ’511 patent, claim 2; ’028 patent, claim 1	“communications device capable of transmitting and receiving data”
“plurality of bonded transceivers”	’881 patent, claim 17, 18; ’028 patent, claim 1	“at least two distinct DSL transceivers coordinated to transmit together and receive together a single stream of data over multiple twisted wire pairs”
“combine multiple DSL transceivers”/ “combined multiple DSL transceivers”	’706 patent, claim 2; ’511 patent, claim 2	“locate least two distinct DSL transceivers on the same communications node so that they are coordinated to transmit together and receive together a single stream of data over multiple twisted wire pairs” / “at least two distinct DSL transceivers located on the same communications node coordinated to transmit together and receive together a single stream of data over multiple twisted wire pairs”

“utilizing at least one transmission parameter value to reduce a difference in latency” / “utilizing at least one transmission parameter value . . . to reduce a difference in latency”	’881 patent, claim 17, 18; ’706 patent, claim 2; ’028 patent, claim 1	“configuring at least one transmission parameter value to decrease a known difference in latency”
“determining at least one transmission parameter value . . . to reduce a difference in latency”	’511 patent, claim 2	“computing at least one transmission parameter value . . . to decrease a known difference in latency”

April 26, 2017

/s/ Colm F. Connolly

Colm F. Connolly (DSBA # 3151)
Jody Barillare (DSBA #5107)
MORGAN LEWIS & BOCKIUS LLP
The Nemours Building
1007 N. Orange Street, Suite 501
Wilmington, DE 19801
Tel: 302.574.3000
Fax: 302.574.3001
colm.connolly@morganlewis.com
jody.barillare@morganlewis.com

Brett Schuman (*pro hac vice*)
Rachel M. Walsh (*pro hac vice*)
GOODWIN PROCTER LLP
Three Embarcadero Center
San Francisco, California 94111
Tel: 415.733.6000
Fax: 415.677.9041
bschuman@goodwinlaw.com
rwalsh@goodwinlaw.com

Attorneys for Defendant 2Wire, Inc.

/s/ Kenneth L. Dorsney

Kenneth L. Dorsney (#3726)
MORRIS JAMES LLP
500 Delaware Avenue, Suite 1500
Wilmington, DE 19801
Telephone: (302) 888-6855
Facsimile: (302) 571-1750
kdorsney@morrisjames.com

Paul M. Sykes
John E. Goodman
David W. Holt
(Admitted Pro Hac Vice)
BRADLEY ARANT BOULT CUMMINGS LLP
One Federal Place
1819 Fifth Avenue North
Birmingham, AL 35203-2119
Telephone: (205) 521-8000
Facsimile: (205) 521-8800
psykes@babco.com
jgoodman@babco.com
dholt@babco.com
Attorneys for ADTRAN, Inc.

/s/ Kenneth L. Dorsney
Kenneth L. Dorsney (Bar No. 3726)
MORRIS JAMES LLP
500 Delaware Avenue, Suite 1500
Wilmington, Delaware 19801
Telephone: (302) 888-6855
Facsimile: (302) 571-1750
kdorsney@morrisjames.com

Yitai Hu (admitted pro hac vice)
Brianna Ford (admitted pro hac vice)
ALSTON & BIRD LLP
1950 University Ave, 5th Floor
East Palo Alto, CA 94303-2282
(650) 838-2000
yitai.hu@alston.com
brianna.ford@alston.com

Elizabeth H. Rader (admitted pro hac vice)
ALSTON & BIRD LLP
950 F Street NW
Washington, DC 20004
(202) 239-3300
elizabeth.rader@alston.com

H. James Abe (admitted pro hac vice)
ALSTON & BIRD LLP
333 South Hope Street, 16th Floor
Los Angeles, CA 90071
(213) 576-1000

james.abe@alston.com

Attorneys for ZYXEL COMMUNICATIONS, INC.
and ZYXEL COMMUNICATIONS
CORPORATION

James S. Green, Sr. (DE0481)
Jared T. Green (DE5179)
SEITZ, VAN OGTROP & GREEN, P.A.
222 Delaware Avenue, Suite 1500
Wilmington, DE 19801
Tel: 302.888.0600
Fax: 302.888.0606
jgreen@svglaw.com
jtgreen@svglaw.com

James L. Day (pro hac vice)
Winston Liaw (pro hac vice)
FARELLA BRAUN + MARTEL LLP
235 Montgomery Street, 17th Floor
San Francisco, CA 94104
Tel: 415.954.4400
Fax: 415.954.4480
jday@fbm.com
wliaw@fbm.com

Richard G. Frenkel (pro hac vice)
Jason M. Garr (pro hac vice)
LATHAM & WATKINS LLP
140 Scott Dr.
Menlo Park, CA 94025
Tel: 650.328.4600
Fax: 650.463.2600
rick.frenkel@lw.com
jason.garr@lw.com

Attorneys for Defendant Zhone Technologies, Inc.

CERTIFICATE OF SERVICE

I, Rachel M. Walsh, hereby certify that on April 26, 2017, a copy of FAMILY 2 -
DEFENDANTS' DISCLOSURE OF CLAIM TERMS FOR CONSTRUCTION AND
PROPOSED DEFINITIONS was served on the following as indicated:

Via E-Mail

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
FARNAN LLP
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Attorneys for TQ Delta, LLC

Via E-Mail

David A. Prange
Ari B. Lukoff
ROBINS KAPLAN LLP
800 LaSalle Avenue, Suite 2800
Minneapolis, MN 55402
(612) 349-8500
(612) 339-4181 (Fax)
dprange@robinskaplan.com
alukoff@robinskaplan.comRajendra

Via E-Mail

Peter J. McAndrews (admitted pro hac vice)
Timothy J. Malloy (admitted pro hac vice)
Thomas J. Wimbiscus (admitted pro hac vice)
Sharon A. Hwang (admitted pro hac vice)
Paul W. McAndrews (admitted pro hac vice)
Anna M. Targowska (admitted pro hac vice)
Rajendra A. Chiplunkar (admitted pro hac vice)
MCANDREWS, HELD & MALLOY, LTD.
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com
twimbiscus@mcandrews-ip.com
pwmcandrews@mcandrews-ip.com
atargowska@mcandrews-ip.com
rchiplunkar@mcandrews-ip.com

/s/ Rachel M. Walsh

2WIRE, INC.'S REPLY MOTION *IN LIMINE* TO PRECLUDE EVIDENCE AND TESTIMONY RELATING TO THE DOCTRINE OF EQUIVALENTS

In its Opposition, TQ Delta purports to “reserve[] the right to argue infringement based on the doctrine of equivalents” at trial. *See* TQ Delta Opp., at p. 1. But TQ Delta has no right to be reserved because, as demonstrated by 2Wire in its opening brief, TQ Delta has never provided any evidence in support of any infringement theory under the doctrine of equivalents. As set forth in 2Wire’s opening brief, despite having multiple opportunities to do so, TQ Delta never disclosed a theory of infringement of the asserted ’881 patent claims under the doctrine of equivalents. TQ Delta did not disclose any theory or evidence under the doctrine of equivalents in response to 2Wire’s Interrogatory No. 5; it did not do so in any of its Court-ordered Final Claim Charts; and it did not do so in any of its infringement-related expert reports. In its Opposition, TQ Delta does not dispute this. Therefore, 2Wire’s motion to exclude any undisclosed evidence regarding purported infringement under the doctrine of equivalents should be granted.

In its Opposition, TQ Delta argues that it should be permitted to introduce a new, undisclosed doctrine of equivalents infringement theory because 2Wire is supposedly resurrecting an abandoned claim construction position. *Id.*, at p. 1. TQ Delta’s accusation is false. The two paragraphs from Dr. Jacobsen’s summary judgment declaration that TQ Delta cites in support of its argument are not re-arguing claim construction. Paragraphs 97 and 149 explain what reducing a difference in configuration latency means to a POSITA, which in turn supports 2Wire’s non-infringement position. Notably, TQ Delta didn’t complain that these paragraphs from Dr. Jacobsen’s declaration amount to improper re-argument of claim construction during the summary judgment briefing process. Regardless, any complaints about Dr. Jacobsen’s opinions do not justify permitting TQ Delta to introduce a new, undisclosed infringement theory under the doctrine of equivalents. Thus, 2Wire’s motion should be granted.

EXHIBIT 17

(2Wire MIL No. 3)

**2WIRE'S MOTION IN LIMINE TO PRECLUDE
EVIDENCE AND TESTIMONY RELATING TO WILLFUL INFRINGEMENT**

Pursuant to Federal Rules of Evidence 402 and 403 and Federal Rules of Civil Procedure 26 and 37, 2Wire respectfully moves the Court to preclude TQ Delta from introducing any evidence at trial relating to purported willful infringement. Such evidence should be excluded from the Family 2 trial at least because (1) there is no evidence that 2Wire knew about U.S. Patent No. 7,453,881 (the "'881 patent") prior to TQ Delta's filing of its initial complaint in this case, on November 4, 2013, so there can be no *pre-lawsuit* willfulness claim; and (2) TQ Delta has never pled or pursued a claim for *post-suit* willful infringement of the '881 patent during the more than five years this case has been pending. Permitting TQ Delta to present an unpled post-suit willfulness theory at the Family 2 trial would be highly prejudicial to 2Wire because, since it had no notice that TQ Delta was intending to pursue such a theory, 2Wire did not prepare a defense to such a claim.

First, TQ Delta should not be permitted to present any evidence of *pre-lawsuit* willful infringement because TQ Delta cannot produce any evidence that 2Wire knew about the '881 patent prior to the filing of TQ Delta's initial complaint in this matter. *See WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1341 (Fed. Cir. 2016) ("Knowledge of the patent alleged to be willfully infringed continues to be a prerequisite to enhanced damages.").

Second, TQ Delta should not be permitted to present any evidence of *post-suit* willful infringement of the '881 patent because TQ Delta never pled or pursued such a claim during discovery and, therefore, neither side conducted or produced any discovery regarding any purported post-suit willful infringement of the '881 patent. Indeed, TQ Delta has recently suggested that it intends to seek leave to amend its complaint to add a claim for post-suit willful infringement. *See* D.I. 1019 (Family 1 Proposed Pretrial Order), at ¶ 45. TQ Delta's acknowledgement that it needs to seek leave to amend its complaint (something that it has not

done) is an admission that there is no claim for willful infringement in the case. 2Wire will oppose any attempt to TQ Delta to amend its complaint to add a new claim at this late date.

Furthermore, any evidence relating to 2Wire's subjective intent after the filing of the lawsuit is irrelevant to the infringement and invalidity issues to be tried at the Family 2 trial. As the Federal Circuit has stated, "[i]nfringement and willful infringement are not the same thing." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1579 (Fed. Cir. 1986). This is particularly true when considering direct infringement, the only type of infringement alleged by TQ Delta, where subjective intent is irrelevant. *See Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 761 n.2 (2011) ("Direct infringement has long been understood to require no more than the unauthorized use of a patented invention. Thus, a direct infringer's knowledge or intent is irrelevant.") (internal citations omitted). To prove willful infringement, by contrast, TQ Delta would need to produce evidence of 2Wire's subjective intent, and 2Wire would be permitted to meet that evidence with its own evidence. *See Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1933 (2016) ("The subjective willfulness of a patent infringer, intentional or knowing, may warrant enhanced damages, without regard to whether his infringement was objectively reckless."). To date, 2Wire's subjective intent is not at issue in the case.

Third, "[t]he court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence." Fed. R. Evid. 403. Here, 2Wire would be unduly prejudiced if TQ Delta were permitted to present any such evidence at trial. Because TQ Delta did not plead a claim for post-suit willfulness in any of its four complaints, 2Wire had no reason to, and did not, develop a defense to such a claim. *See, e.g., DaimlerChrysler Corp. v. United States*, 442 F.3d 1313, 1320 (Fed.

Cir. 2006) (noting that the primary purpose of a plaintiff's complaint is to "give the defendant fair notice of what the plaintiff's claim is and the grounds upon which it rests") (internal quotations and citation omitted). Further, because TQ Delta has not pled or pursued any post-suit willful infringement claim at any point during the entire life of this case, 2Wire has not identified any witnesses to testify in response to a post-suit willfulness claim. It would be unfair and highly prejudicial to force 2Wire to respond to TQ Delta's as-yet-undisclosed evidence of willful infringement on-the-fly at trial.

Accordingly, 2Wire respectfully requests that the Court preclude TQ Delta from introducing any evidence and testimony at trial relating to willful infringement.

TQ Delta's response to 2Wire's motion *in limine* requesting preclusion of evidence and testimony relating to willful infringement

2Wire's motion *in limine* to exclude evidence and testimony relating to willful infringement should be denied. TQ Delta does not contend that 2Wire had actual knowledge of U.S. Patent No. 7,453,881 ("the '881 patent") prior to TQ Delta's filing of its initial complaint. As indicated in TQ Delta's Proposed Pretrial Order, however, TQ Delta intends to seek leave to amend its complaint to add a claim for post-suit willfulness based on 2Wire's frivolous defenses and its very recent efforts to maintain willful blindness of, and obfuscate clear evidence of, its infringement. 2Wire's assertion that it "had no notice" of TQ Delta's claim of willfulness is demonstrably wrong because 2Wire served an interrogatory asking for the basis of TQ Delta's claim for willful infringement to which TQ Delta provided a detailed response. Ex. A. 2Wire has not shown that it would be unfairly prejudiced by TQ Delta's willfulness claim. The focus of the claim is on 2Wire's conduct, and no further discovery is needed.

2Wire argues that "neither side conducted or produced any discovery regarding any purported post-suit willful infringement of the '881 patent." (2Wire Br. at 1.) 2Wire is wrong. TQ Delta's claim for *post-suit* willful infringement is necessarily based on 2Wire's subjective intent and conduct *during* the pendency of this case, and more particularly, on recent conduct that demonstrates that 2Wire's non-infringement defense is frivolous. 2Wire has known, at least as early as 2017, that TQ Delta would rely [REDACTED], yet 2Wire did not have its expert, Dr. Walker, review the source code until January 21, 2019.¹ Thereafter, the night before his deposition, 2Wire submitted a supplemental expert report of Dr.

¹ In fact, even after receiving TQ Delta's final infringement contentions on July 2, 2018, which contained detailed source code charts pointing to specific files and lines of the code, 2Wire chose not to have its own consultants review the source code and stated, in a supplemental interrogatory response, that it did not have non-infringement positions based on source code. 2Wire made no attempt to review the source code until after being served with TQ Delta's expert report regarding its source code analysis.

Walker regarding a myopic assessment of the source code.² TQ Delta's expert Dr. Almeroth submitted a declaration to respond to Dr. Walker's demonstrably meritless arguments. *See* D.I. 971.

In his supplemental report, Dr. Walker ignores the relevant portions of the source code that negates his supplemental position and demonstrates clear evidence of infringement. 2Wire's supplemental position simply raises a frivolous argument based on selectively ignoring portions of the source code that plainly refute his position.³ Thus, not only has 2Wire maintained a position of willful blindness to the relevant source code for years, even after Dr. Walker's belated analysis of the code 2Wire continues to engage in gamesmanship to ignore clear evidence of infringement.

2Wire's recent conduct is amplified by the fact that its non-infringement position is flatly contradicted by 2Wire's [REDACTED] in which 2Wire admits [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

² [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Dated: April 8, 2019

Respectfully submitted,
FARNAN LLP

/s/ *James P. Murphy*

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
James P. Murphy (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
Rajendra A. Chiplunkar (admitted *pro hac vice*)
McAndrews, Held & Malloy, Ltd
500 West Madison Street, 34th Floor
Chicago, IL 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC

EXHIBIT A

REDACTED

EXHIBIT B

REDACTED

2WIRE’S REPLY BRIEF IN SUPPORT OF ITS MOTION *IN LIMINE* TO PRECLUDE EVIDENCE AND TESTIMONY RELATING TO WILLFUL INFRINGEMENT

The Court should preclude TQ Delta from introducing any evidence at trial relating to purported willful infringement. In its opposition, TQ Delta admits: (1) it has no claim for *pre-suit* willful infringement, *see* TQ Delta Opp., at p. 1; and (2) there is no claim in the case currently for *post-suit* willful infringement because, even at this late date, it still has not filed a motion for leave to amend the complaint, *see id.*, at p. 3. TQ Delta should not be permitted, at this late date, to add a new claim for post-suit willfulness and to put on evidence in support of such a claim that was not disclosed during fact discovery.

The arguments in TQ Delta’s opposition should be rejected. *First*, TQ Delta’s November 15, 2017 interrogatory response did not give 2Wire sufficient notice of TQ Delta’s post-suit willfulness claim. The first part of TQ Delta’s interrogatory response discusses pre-suit communications, which are irrelevant now given TQ Delta’s belated admission that “TQ Delta does not contend that 2Wire had actual knowledge of [the ’881 patent] prior to TQ Delta’s filing of its initial complaint.” *Id.*, at p. 1. And the remainder of TQ Delta’s interrogatory response makes no mention of the ’881 patent or the G.998.2 standard. Moreover, most of the conduct TQ Delta now relies upon in its opposition occurred *after* TQ Delta’s November 2017 response, which TQ Delta never supplemented to include the purported bases for post-suit willfulness set forth in TQ Delta’s opposition. *Second*, TQ Delta’s reliance on *TC Technology LLC v. Sprint Corp.*, No. 16-cv-00153-RGA, D.I. 316 (D. Del. Feb. 11, 2019) is misplaced. In *TC Technology*, the Court found that plaintiff demonstrated good cause by seeking leave to amend shortly after learning of new information during fact discovery. *Id.*, at p. 4. Moreover, plaintiff filed its motion for leave in October 2018—seven months before the scheduled May 13, 2019 trial date. Here, trial is set to begin on April 29, 2019, and TQ Delta *still* has not filed a motion for leave to amend. Moreover, TQ Delta cannot identify any new discovery that would establish good cause.

EXHIBIT 18

Multimedia filing
submitted with the Clerk

REDACTED

EXHIBIT 19

(Blank)